# URBAN PLANNING AND LAND POLICIES

•

VOLUME II

OF THE

SUPPLEMENTARY REPORT OF THE URBANISM COMMITTEE

TO THE

NATIONAL RESOURCES COMMITTEE

From the collection of the

Prelinger Library

San Francisco, California
2008

# URBAN PLANNING AND LAND POLICIES

VOLUME II

OF THE

SUPPLEMENTARY REPORT OF THE URBANISM COMMITTEE

TO THE

## NATIONAL RESOURCES COMMITTEE

•

*The National Resources Committee assumes no responsibility for the views and opinions expressed herein*

UNITED STATES GOVERNMENT PRINTING OFFICE WASHINGTON : 1939

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - - - - - - - Price $1.00

## LETTER OF TRANSMITTAL

JANUARY 18, 1938.

On August 9, 1937, the National Resources Committee submitted to the President its report on "Our Cities—Their Role in the National Economy." In the course of preparing this report a large volume of basic data and information was collected which could not then be included. The publication of these supplementary volumes has been undertaken to make such data and information available to interested persons and organizations.

The Supplementary Report of the Urbanism Committee has been organized into two separate volumes according to subject matter. Organization and publication on this basis was arranged because many persons and agencies are interested only in certain parts of the supplementary report. The two volumes do not purport to cover all aspects of the subject of urbanism. Nor do they attempt to cover all phases of the individual subjects treated. Other materials, not included in these publications, provided important data and suggestions for the report of the Urbanism Committee as transmitted to the President.

The points of view expressed in these volumes are those of the contributing individuals. The Urbanism Committee presents these reports as information but assumes no responsibility for the opinions expressed.

These volumes were prepared under the direction of Ladislas Segoe, director of the studies made by the Urbanism Committee. Selection of the material for publication was made by an editorial committee composed of Ladislas Segoe, Louis Wirth, and Albert Lepawsky. Editing and preparation of the reports for publication were under the direction of Harold F. Gosnell, special consultant to the National Resources Committee. Authorship by agencies and individuals is acknowledged in their respective contributions.

URBANISM COMMITTEE

**Clarence A. Dykstra, *Chairman.***
**M. L. Wilson.**
**Louis Wirth.**
**Ladislas Segoe, *Director.***
**Louis Brownlow.**
**Arthur C. Comey.**
**Charles W. Eliot 2d.**
**Harold D. Smith.**

## NATIONAL RESOURCES COMMITTEE

Harold L. Ickes, *Chairman*
*Secretary of the Interior*

Frederic A. Delano
*Vice Chairman*

Harry H. Woodring
*Secretary of War*

Henry A. Wallace
*Secretary of Agriculture*

Harry L. Hopkins
*Secretary of Commerce*

Francis C. Harrington
*Works Progress Administrator*

Frances Perkins
*Secretary of Labor*

Charles E. Merriam

---

## ADVISORY COMMITTEE

Frederic A. Delano, *Chairman*

Charles E. Merriam

Henry S. Dennison

Beardsley Ruml

---

## STAFF

Charles W. Eliot 2d
*Executive Officer*

Harold Merrill
*Assistant Executive Officer*

---

## URBANISM COMMITTEE

C. A. Dykstra, *Chairman*
Louis Brownlow
Arthur C. Comey

Charles W. Eliot 2d
Harold D. Smith

M. L. Wilson
Louis Wirth
Ladislas Segoe, *Director*

# VOLUME II
# URBAN PLANNING AND LAND POLICIES

## Contents*


| | Page |
|---|---|
| Part I. Planned Communities<br>By Arthur C. Comey and Max S. Wehrly | 3 |
| Part II. Urban Living Conditions<br>By Louis Wirth and Edward Shils | 163 |
| Part III. Urban Land Policies<br>By Harold S. Buttenheim | 211 |


*Because of the detailed tables of contents preceding each part of this volume, to be found on pages 3, 163, and 211, no subject index has been provided.

# PART I

# PLANNED COMMUNITIES*

## Contents


**Summary**

| | Page |
|---|---|
| The Developers and Their Objectives | 3 |
| Present Conditions and Characteristics of Planned Communities | 3 |
| Conclusion and Recommendations | 7 |
| **Introduction** | 8 |
| **Section 1. Historical Background** | 12 |
| **Section 2. Case Studies** | 18 |
| Communities Developed by Industrial Agencies | 21 |
| Separate Communities | 21 |
| Alcoa, Tenn. | 21 |
| Chicopee, Ga. | 24 |
| Fairfield, Ala. | 27 |
| Hopedale, Mass. | 30 |
| Kapuskasing, Ont. | 32 |
| Kingsport, Tenn. | 35 |
| Kohler, Wis. | 39 |
| Longview, Wash. | 41 |
| Silvertown, Ga. | 44 |
| Torrance, Calif. | 46 |
| Vandergrift, Pa. | 47 |
| Suburban Communities | 51 |
| Goodyear Heights, Akron, Ohio | 51 |
| Indian Hill, Worcester, Mass. | 53 |
| Communities Developed by Governmental Agencies | 56 |
| War Housing—Separate Communities | 56 |
| Brooklawn (Noreg), N. J. | 56 |
| Cradock, Va. | 59 |
| Hilton Village, Va. | 61 |
| Yorkship Village, Camden, N. J. | 64 |
| War Housing—Suburban Communities | 67 |
| Union Park Gardens, Wilmington, Del. | 67 |
| Power, Reclamation, and Similar Projects (Separate Communities) | 69 |
| Boulder City, Nev. | 69 |
| Norris, Tenn. | 70 |
| Demonstration Projects (Separate Communities) | 75 |
| Greenbelt, Berwyn, Md. | 75 |
| Capital Cities | 76 |
| Washington, D. C. | 76 |
| Communities Developed by Real Estate Agencies | 82 |
| Separate Communities | 82 |
| Riverside, Ill. | 82 |
| Suburban Communities | 83 |
| Country Club District, Kansas City, Mo. | 83 |
| Palos Verdes Estates, Calif. | 85 |
| Roland Park, Baltimore, Md. | 89 |
| Communities Developed by Philanthropic Agencies | 92 |
| Separate Communities | 92 |
| Mariemont, Ohio | 92 |
| Radburn, N. J. | 97 |
| Suburban Communities | 101 |
| Chatham Village, Pa. | 101 |
| Forest Hills Gardens, N. Y. | 104 |
| **Section 3. Concluding Discussion** | 110 |
| Objectives of Planned Communities | 110 |
| By Industrial Organizations | 110 |
| By Governmental Organizations | 113 |
| By Real Estate Organizations | 114 |
| By Philanthropic Organizations | 115 |
| Location of Planned Communities | 115 |
| By Industrial Organizations | 115 |
| By Governmental Agencies | 118 |
| By Real Estate Agencies | 119 |
| Summary | 120 |
| Physical Arrangement and Convenience of the Plan | 121 |
| Regional Location and Access | 121 |
| Street Pattern | 121 |
| Housing | 128 |
| Retention of Identity | 133 |
| Physical Provisions Affecting Social Factors | 135 |
| Parks and Playgrounds | 135 |
| Community Activities and Provisions other than Parks | 137 |
| Centralization and Decentralization of Community Facilities | 138 |
| Self-Sufficiency of the Planned Community | 139 |
| Amenity | 143 |
| Adherence to the Plan | 145 |
| The Use of Legal Restrictions | 147 |
| Community Government | 149 |
| The Realization of Objectives of Planned Communities | 150 |
| Past and Present Driving Forces and Future Policies | 151 |
| **Bibliography** | 153 |


*Prepared by Arthur C. Comey and Max S. Wehrly, with the cooperation of the Department of Regional Planning of Harvard University.

## ACKNOWLEDGMENTS

The following people, in addition to filling out the questionnaire used in this study, greatly enhanced the value of Mr. Wehrly's field trip by their personal interest and interviews:

| | *(Planned Communities)* |
|---|---|
| Mr. N. C. Courtney, Mayor | Brooklawn, New Jersey |
| Mr. V. J. Hultquist, City Manager | Alcoa, Tennessee |
| Mr. L. B. Hiebel, Planning Engineer, Akron | Goodyear Heights & Firestone Park |
| Mr. Clarence A. Perry, Russell Sage Foundation | Forest Hills Gardens, N. Y. |
| Messrs. C. F. Ziegler and A. Stoddart, Officials of the Hershey Estates | Hershey, Pennsylvania |
| Mr. J. Fred Johnson | Kingsport, Tennessee |
| Mr. O. L. King, City Engineer | Kingsport, Tennessee |
| Mr. Myron D. Downs, Engineer, Cincinnati Regional Planning Commission | Mariemont, Ohio |
| Mr. John Nolen | Happy Valley and Kingsport, Tenn.; Mariemont, Ohio, Kistler, Pa., and Clewiston, Florida |
| Mr. J. H. Eddy, Manager, Kaul Lumber Company | Kaulton, Alabama |
| Personnel Manager, The Norton Company | Indian Hill, Worcester, Mass. |
| Mr. C. N. Gilley, Mayor | Fairfield, Alabama |
| Dr. Kibby, Dept. of Sanitation & Welfare, Tennessee Coal, Iron and Railroad Company. | Fairfield, Alabama |
| Mr. Tracy B. Augur, T. V. A | Norris, Tennessee |
| Mr. Earle S. Draper, T. V. A | Southern communities of significance |
| Mr. Ralph Eberlin, Chief Engineer, City Housing Corporation | Radburn, New Jersey |
| Mr. A. T. Mathews, General Manager, Martha Mills, Goodrich Tire & Rubber Company. | Silvertown, Georgia |
| Mr. F. G. Binford, Constr. Engr., Goodrich Tire & Rubber Co | Silvertown, Georgia |
| Mr. Paul W. Viets, Plymouth Cordage Company | North Plymouth, Massachusetts |
| Mr. J. A. Grimm, Mayor | Vandergrift, Pennsylvania |

The following people, in addition to filling the questionnaires, put at our disposal maps, charts, and other graphic material of substantial value to our study:

| | |
|---|---|
| Mr. G. W. Hayler | Belle Haven City, California |
| Mr. Charles Lewis, Director, The Buhl Foundation | Chatham Village, Pennsylvania |
| Mr. J. C. Nichols | Country Club District, Kansas |
| Mr. O. H. Koch | Greenways Park, Texas |
| Mr. J. H. Eddy, Mgr., Kaul Lumber Company | Kaulton, Alabama |
| Mr. S. Herbert Hare, Consultant, Kansas City, Missouri | Longview, Washington |
| Mr. H. Morris, Vice-President, Long-Bell Lumber Company | Longview, Washington |
| Mr. E. W. Barton, Secretary, Planning Council | Longview, Washington |
| Mr. P. V. Dick, Manager, Real Estate Dept., Longview Co | Longview, Washington |
| Mr. Charles J. Livingood, T. J. Emery Memorial | Mariemont, Ohio |
| Mr. A. B. Horwitz, Duluth City Plan Engr., and Mr. J. G. MacDonald of the Morgon Park Co. | Morgon Park, Minnesota |
| Mr. Charles H. Cheney | Palos Verdes Estates, Calif. |
| Mr. F. L. Olmsted | Palos Verdes Estates, Calif. |
| Miss Anne Waddell, Roland Park Company | Roland Park, Baltimore, Md. |
| Mr. E. S. Noble, Gen. Mgr., Spruce Falls Power & Paper Company | Kapuskasing, Canada |
| Mr. J. Alexander Walker, Vancouver Town Planning Commission | Port Mann, Canada<br>University Endowment Lands, Canada |
| Mayor A. K. Grimmer | Temiskaming, Canada |
| Mr. John Nolen | Happy Valley and Kingsport, Tenn., Mariemont, Ohio, Kistler, Pa., and Clewiston, Florida |

To the following organizations we are indebted for assistance in the preparation of our research:

| | |
|---|---|
| Resettlement Administration | for data supplied on Greenbelt |
| National Capital Park & Planning Commission (Mr. John Nolen, Jr.) | for maps and charts furnished in connection with the Washington section of the report |
| U. S. Dept. of Commerce, Bureau of the Census | for furnishing requested population statistics |

Individuals actually employed both in compiling and organizing material and drafting charts and maps:

Harold W. Lautner, Research Assistant, Dept. of Regional Planning, Harvard University

Edith K. Kepler, Research Secretary, Dept. of Regional Planning, Harvard University

# PART I*

# SUMMARY

The success attainable through the planning of communities has been appraised through case studies of 144 of those comparatively few communities which, unlike the ordinary city, have actually been constructed from the start according to a more or less comprehensive physical plan. The community studied may be an isolated community or village, a satellite to a city, or merely a recognizable neighborhood within a city; it may be purely residential or it may include schools, parks, business, industry, or farms, in any combination. Of those studied, the largest number are satellite or suburban communities. A few are within the limits of existing cities, and an intermediate number are independent communities.

### The Developers and Their Objectives

Unity of authority has been an important factor in achieving the varied objectives of industry, government agencies, real estate and philanthropic organizations which have developed these communities. Of the communities studied, those founded by industry constitute over one-half (53.5 percent) of the total; by private developers for urban residential purposes, over one-fourth (25.7 percent); and for rural and agricultural residential purposes, over one-tenth (10.4 percent). War housing towns and villages make up 7.6 percent; and miscellaneous development, 2.8 percent.

Industry established these communities with the view of providing a stable labor supply, access to raw material, markets, or power. Of the 77 such communities studied, those built by textile industries (18), coal mining (11), steel industries (9), and pulp and paper industries (8) together account for nearly two-thirds (60 percent) of the total. These 77 industrial communities, as a rule, have been notably sound and stable, providing a means of livelihood for the inhabitants; their location and construction have been based on sound economics and a comparatively thorough analysis of the problems involved. Stability of industry was found to be the most important factor in their success and instability, the most important cause of the failures.

Governments built communities for similar purposes, in connection with both wartime industry and peacetime public works such as large dams. The communities for war workers were located, firstly, to serve war industries and, secondly, as permanent communities for the demonstration of a social ideal either of an urban or rural type. Washington exemplifies the Federal Government's effort to create a capital city of notable appearance and efficiency.

Real estate organizations were primarily interested in selling at a profit their product, which ranged from merely platted lots to complete homes and as many neighborhood facilities as appeared to them desirable to increase net profits. Philanthropic individuals or organizations usually aimed to set an example or to contribute to the social welfare by creating communities, in some cases for those of low income rarely served by commercial enterprises. Residential communities built by these two types of agencies are usually either suburban or satellite to a large city, the latter, with the exception of the limited number provided for high-income groups, being the more difficult to develop and protect. Location in proximity to industrial or business enterprises was found to be important to sound investment for both the developer and the residents.

### Present Conditions in and Characteristics of Planned Communities

All economic classes are represented in the planned communities. In general, the industrial communities are intended to and do house the low-income groups, though they sometimes reach farther up the income scale as well—especially in the independent, isolated settlements. The real estate projects are occupied by persons of medium or high income, rarely by those earning less than $30 a week. The philanthropic projects are mostly for the middle-income group (about $50 per week). Most of the government war projects, on the other hand, are now housing workers.

The detailed findings, both as they apply to actual and ideal conditions and relate to the physical and economic structure of the planned community, are summarized below.

*Access.*—Planned communities, like others, should have direct access to nearby cities, but suffer when intersected by main highways or railroads. A location on one side of a major artery is found best. Railroad facilities are important only to serve industry, except in the case of a suburb in a large metropolitan region. The almost exclusive use of bus and private automobile emphasizes the need of adequate highways both for access to and movement within the community.

*The year referred to throughout the study is 1936.

*Disposition of Districts.*—Industrial districts are easily accessible to homes in most communities founded by industry, being either central to encircling residential neighborhoods or, where topography interferes, circumferential or occasionally detached though nearby. Residential suburbs or satellites founded by real-estate agencies, on the other hand, are seldom closely related to industry. Successful local business districts have been either centrally located or, better, on a main highway at the principal entrance into the community, thus being on the way of the maximum number of persons to and from work and also avoiding intrusion into the residential section.

*Disposition of Open Spaces.*—While a single large park is sometimes found to serve the major recreational needs of a community, lineal systems, either marginal to or within neighborhoods, serve in addition either to enclose the residential unit or to provide a network of open spaces to which the residential groups are related.

*Street Pattern.*—Even though through traffic is led around a community, local traffic both into and out of the town and moving within it requires a system of major roads distinct from streets for local access only. The resulting pattern may be dominantly radial, spider-web, or gridiron, but is ordinarily greatly modified to fit topography. While there has been a tendency to adopt the gridiron wherever practicable, where it was departed from greater effectiveness in planned communities has almost invariably resulted. Where the ordinary block pattern has been replaced by culs-de-sac for access to dwellings, the result has usually been highly satisfactory. Unity in appearance has been produced both by formal arrangements with straight lines, particularly on flat or gently rolling topography, the resulting vistas often being effectively terminated by structures, and by curving lines, particularly where adapted to rolling ground. Even where topography controls through its effect on cost of drainage and other works, the street pattern need not be deprived of visual unity.

In planned communities almost without exception, street and roadway widths are varied according to expected needs. Minor roadways have frequently been as narrow as 18 feet, though the general use of the automobile has made this seem too narrow in some towns where cars are apt to be parked along the street. Major streets have varied greatly in width, some being later found too narrow due to unexpected growth of the community and increased parking, particularly in business districts. In the rare case where off-street parking has been worked out, it has been advantageous.

Alleys have been provided in business areas in more than half of the planned communities, and in residential areas in considerably less than half, with various results, so that no rule can be set down. In certain cases where alleys have constituted rear streets, with the usual street in front omitted in favor of open space, the result has been highly successful.

The total percentage of a residential community devoted to streets varies from about 18 to 33 percent, in general being greater, the greater the density of house units per acre.

*Lots.*—Company towns have usually provided ample lots for each dwelling, the usual housing densities being considerably under the maximum of 12 houses per acre of gross area set as a standard for British Garden Cities. Lots laid out by real estate agencies, which serve a higher income group, average larger yet, with a much lower housing density. With such large lots, orientation is found to be of minor significance.

*Housing.*—Single family detached dwellings predominate in the planned communities. In company towns, the proportion of home owners seems to depend, among other factors, on the policy of the company. Row houses, semi-detached houses are less desired for ownership. In the transition that usually occurs sooner or later to self-government, ownership has often increased materially. Subsequently, the number of renters has tended to approach the normal in similar communities. Rentals in company towns are in a few cases so low, compared with the value of the house, as to indicate a large subsidy to the occupant; others apparently involve no such subsidy. Residents of government-constructed communities are usually subsidized insofar as the government has taken substantial losses on resale, whereas real estate projects are obviously conducted on a strictly business basis. The philanthropic projects are subsidized to the extent that the sponsoring foundations are satisfied with a limited profit.

The quality of maintenance of rented houses varies according to the degree of central control, with economy resulting from large-scale maintenance. Owner-occupied homes vary in maintenance with the inclination of the owner and the community spirit. Maintenance of public areas is fostered by homes associations. Among low-income groups, the use of durable materials throughout has greatly helped maintenance of houses and retention of their appearance.

*Deterioration and Obsolescence.*—Planned communities have suffered little from deterioration because most of them are comparatively young and because they have been better planned and built than most communities and better maintained.

Such obsolescence as was found has been due to unforeseen changes in public demand which have not been met, and in some cases could not be met. For example, the developing technique of building and the provision of facilities now require electric lights, sewer and water connections, and row houses not more than

two rooms deep. Loss through inappropriate use of residential areas has been slight in planned communities, but loss due to change in development of the area adjacent to the community has been serious. Business, heavy traffic, a railroad, or an inferior residential development just outside the boundary has depreciated neighboring dwelling areas, this being followed by deterioration through inferior upkeep.

*Retention of Identity.*—Difficulties of complete land assembly within the community sometimes result in incongruous development on areas not controlled. While it has usually been impracticable to acquire, or even to control, enough land around a community so as to avoid all depreciating uses, a considerable number are protected in greater or less degree by being adjacent to water areas. Others are partially protected by existing parks, cemeteries, educational institutions, or merely by land too rough to be easily used. Partial or even complete new buffer parks or "greenbelts" have been incorporated in the plans for a few communities, notably in recent government towns; and many company towns are flanked by other company land, used for gardening and the like. Acquisition of both sides of a boundary street, the allocating of sites for public buildings, and even high boundary walls provide nearby protection. Complete development of a community right up to its borders safeguards it from subsequent incongruity within its own area. The protection against change in use of land within the community afforded by restrictions and zoning may be enhanced by the articulation of the plan itself, fitting the layout to the function in each area. A notable example is the cul-de-sac inseparably related to residential use.

*Physical Provisions Affecting Social Factors.*—Community recreation is fostered in planned communities by effective disposition of substantial park area, averaging in extent one-sixth of their entire planned area, a larger proportion than is found in most cities. More parks have been provided in the more recent communities. The public parcels in front of house groups are not found satisfactory for play spaces.

Provision of schools, churches, community buildings, hospitals, and the like depends on the community's size or wealth or subsidy. The inhabitants of many of the company and government war towns receive through such subsidized buildings advantages otherwise unattainable. Small towns and groups with low incomes find such facilities difficult to provide. The success of community activities seems to depend not on size but on social solidarity and spirit engendered by homogeneity of population and similarity of income. This suggests groupings within communities, each having its own economic and social character. This, the physical plan can facilitate.

Community life should be fostered by focussing it on a center containing government and community buildings and some open space for communal use. In communities of the types herein studied, most business appears to be better located at the periphery, thus making it possible to avoid disrupting the community by traffic. In larger cities, the same principle may be made effective through unit or cellular arrangement of communities within them. Churches tend to be scattered. Many of the recreation facilities and schools are related to tributary districts.

*Self-Sufficiency of the Planned Community.*—The proportion of wage earners in the communities studied finding employment locally varies extremely. Except where all the homes are rented by an industrial company, they tend, often due in part to changes in the industry itself, to become occupied by persons working elsewhere. The proportion of wage earners working in an industrial community who also live there likewise varies. Some companies provide housing for key employees only. This has sometimes caused criticism on the grounds of partiality. It may be better for the town if, where possible, the less stable population is housed elsewhere. The desire of workers living outside to live in the community produces low turnover and low vacancy ratios in company towns. In communities founded by real estate agencies, only a small fraction of the wage earners are on the average locally employed.

Industrial towns average comparatively high in self-sufficiency of trading, due to their segregation geographically and economically, the relatively low incomes of the inhabitants, and the frequent existence of a company store providing superior service. At the other extreme, in high-grade residential suburbs, local trading averages small in amount. The expected degree of self-sufficiency in trading should be reflected in the size of the business area. Too small an area causes monopoly, too large, undue scattering and loss through excess utilities. Where the ultimate tributary area is unknown, the plan should provide for gradual expansion by adding successive neighborhood units, each provided with its own business district.

Self-sufficiency of community life is reflected by the amount of participation in community activities. This is very considerable in some of the communities studied. In many of them, the inhabitants are conscious of the advantages of living in such a distinct, well-organized unit. The physical plan has been a major factor in cementing the interests of the community together to promote better living and greater self-sufficiency, which, in turn, has helped the maintenance of the plan.

*Amenity.*—Good appearance of a community is as real and salable as other provisions meeting human needs. It depends on the good appearance of indi-

vidual houses, streets and the like, on the unified organization of the community, and on a high quality of upkeep throughout. From every standpoint, the town should present a well-composed picture in harmonious scale, and the unity of the whole should be perceptible through emphasis given by major streets, and particularly by such a focus as the community center. It should also be adapted to the scenery and topography. In almost all of the communities studied, street-tree planting has enhanced their appearance as compared with ordinary developments. Occasionally, overplanting has tended after a time to impair the effect sought. Good appearance is found to be consistent with the highest economy, and is attainable in towns for very low income groups.

*Adherence to the Plan.*—In the communities studied, large departures from the plan are the exception. Change in controlling agency is likely to involve an unfortunate change in or a misunderstanding of the objective embodied in the plan, particularly when it has not been at the time completely carried out. Other changes, due to decisions subsequent to preparation of the plan, have had bad results, which in some instances could have been avoided by recasting the plan, but in others have occurred after so many parts of the plan had been constructed that revision was impracticable. The more comprehensive the plan and the more fully carried out, the better has been the result, as illustrated by the many communities where the initiating agency or one sympathetic to its objectives has continued in control.

*Use of Legal Restrictions.*—Municipal zoning and building codes and private deed restrictions have been generally adopted for the benefit of planned communities. In some cases, the plans themselves, according to which these communities were constructed, have been their principal protection against undesirable developments. In fact, the plans have often served to protect the legal restrictions from pressure for change, owing to the fact that the plan met the current use perfectly but was ill-adapted to any other use. Further, a well-articulated plan has been found to stimulate public support against encroachments. The community must be protected by both the plan and by legal restrictions.

*Community Government.*—Various forms of local government have been successfully used for planned communities. There are private company towns, incorporated company towns, incorporated towns no longer dominated by a company, independent diversified industrial cities, communities operated by realty companies, by appointed associations, and by citizens' associations, and ordinary incorporated towns. Since the form of government bears directly on the success of certain features of these community plans, the planner must have assurance as to administrative policy before he can plan. Under ordinary municipal governments, small areas of public land in front of houses, interior parks, or playgrounds, and other group features and schemes for group housing and cooperative living arrangements are difficult to maintain or operate. With proprietary authority or owners' associations, they may be entirely sound and desirable. Since community life is promoted by such provisions, it appears appropriate to establish within cities distinct groupings for attaining these purposes. This is another reason for promoting the cellular or neighborhood unit type of integration in cities.

*Appraisal.*—It is the preponderant opinion of those now in contact with the 144 planned communities studied that success has been achieved both in meeting the objectives of the developers in general and in a multitude of specific ways. Industries consider that the planned development of communities has been "good business"; the war housing developments have been successful in providing a desirable urban environment for those living in them and as examples for community building of this type; real estate enterprises have begun to appreciate the value of the "community plan" for profit making; philanthropic organizations have contributed much to concrete progress in the field.

Factors other than preplanning which contribute to the success of the industrial communities, which have been the most uncertain type of planned community, are: (1) sound, stable, and diversified industry; (2) intelligent management by a manager on the ground, especially by an independent agency set up by the concern rather than by the concern itself; (3) policy of selling homes rather than renting them; (4) personal ideals and interest of a proprietor. Factors which contribute to failures include: (1) failure of the company as a whole, or of the plant for which the town was built; (2) unintelligent (commonly absentee) management, characterized by niggardliness in supplying public facilities; and (3) instability of employment.

The automobile and hard-surfaced road have recently extended the distance within which the workers employed in a plant may reside and have considerably diminished the necessity for industries, unless unusually isolated, to build communities for their workers. Otherwise, the motivations which have caused the agencies to develop such communities as those studied are not changing materially. There are indications that the development of planned communities of these kinds will be continued by the same interests.

Urban communities suffer far more from unforeseen changes than from physical deterioration. It appears that the more completely a plan expresses the social objective of the community, both in the general dis-

position of functions and in the detailed treatment of each area, the better it protects the community from obsolescence. It was found that the community is most vulnerable along its borders and should therefore be protected by physical buffers from unsuitable development outside. Perhaps the best protection and stability can be afforded to a community by organizing it as a neighborhood unit in the urban pattern and by integrating it at the proper time with other districts and similar units in the urban region. The continued improvement of planning depends on improvement in governmental control. Insofar as the purposes for which a community is planned can be perpetuated as the purposes animating the controlling agency, just so far can planning achieve its success.

**Conclusions and Recommendations**

Planning new communities in America has succeeded in preventing or at least in postponing many of the difficulties and problems so familiar in the ordinary unplanned city. These planned communities, largely as a result of forethought expressed through their planning, are comparatively free from overcrowding of buildings and population. Their inhabitants enjoy greater efficiency, greater safety, and a more healthful and, in a very great measure, a more attractive environment. Many of these communities exhibit an unusually high degree of social cohesion and community spirit. Where adequate safeguards were incorporated in the plan, these communities retain their identity for a long period or indefinitely. Deterioration through obsolescence is greatly reduced.

Under conditions of long-time unified control, intelligent planning may confidently be expected to be effective as a tool in the hands of those working for community welfare in preventing the ills and conflicts of purposes and interests otherwise likely to occur in the development and continued existence of future new and enlarged communities.

1. Planning for achieving such results should be applied wherever a new community is to arise or an old one is to be extended. This may be done by a variety of agencies—private, such as industry, real estate enterprise or philanthropy, or by government—the important factor being continuity of the agency in control, or at least continuity of its purpose.

2. The success of planned communities has been so pronounced as to justify fully the recommendation that the several agencies, official and unofficial, in a position to do so should bend every effort to promote community planning. It appears fully warranted to urge further, in the light of the success of planning for new communities, that similar planning methods may likewise be applied generally in established urban areas with a promise of success towards the remedying of the ills and problems of our urban environment and existence.

# PART I
# INTRODUCTION

This study has been undertaken with a view to presenting useful deductions relating to success, or nonsuccess, in the planning of communities, that is, in the utilization of general plans prepared in advance of construction of what are often referred to as "model" towns or cities or parts thereof. In order to bring the study within the practical limits of the time and effort available, to avoid relatively ineffective study, and to keep the results sufficiently definite for use by confining the scope of the study to what appears to be the most important phase of the subject, it was decided at the outset that "planned" should mean comprehensively planned, in accordance with modern conceptions of city planning, but not necessarily so planned in all respects. A community with a mere rectangular street plan, though technically meeting the requirement of preplanning, does not ordinarily indicate the application of modern planning technique and so is not included in this study; nor is a community consisting of successive "additions" or "subdivisions" of blocks and lots, each planned separately with comparatively little thought for the community as a whole.

A "plan" in the abstract suggests some form of organization which will meet certain definite needs and solve certain definite problems. It suggests the completeness of a conception, within which the various elements which comprise it are in organic relation to one another, and to the whole. Thus, a planned city should represent the physical vehicle by means of which an apparent attempt has been made to meet an objective or solve a problem according to a rational and comprehensive arrangement of the necessary physical elements. This arrangement may be called design. The quality of such a design may be tested as to function, form, and fitness.

Briefly, a plan for a community should so arrange its physical elements that the community serves to the best advantage the use intended; this use is its *function*. The component parts of the community should be related to each other and to the whole in a rational and organized manner, this manner constituting its *form*. Any plan in the last analysis rests not only on its own qualities, but literally upon the natural qualities and characteristics of land. To use land intelligently is to recognize *its* form and function as well as the form and function designed to be superimposed upon it. To be successful, the two should be compatible; that is, there should be *fitness* of the whole to its site and surroundings.

In order, then, to have a community that may be called planned, each of the three primary considerations of function, form, and fitness must be present to some degree. The principal factors normally to be considered in community planning are location, both local and regional; sufficiency of function and effect upon existing conditions; topography and its relation to transit, transportation, street alignment, grades, traffic, and underground utilities; land use in regard to business, industry, residence, and public open spaces; type of population and its characteristics, needs, and income, which will affect the allotment of area in lots and the determination of housing types; and the size of the community. All of these features together form the physical pattern which enables a group of people to live together as a society. If there is any advantage to be found in providing and arranging physical facilities, it should be found in an arrangement whereby the society may more easily express some unified or common interest in the form of government, education, recreation, amusement, work, mode of living, or social intercourse, all of which are essential elements in providing a better environment and producing a more happy and contented people.

A further requirement for inclusion as a "planned" community in this study has been that enough construction shall have been carried out in general accordance with the plan and usually by a single authority to make the achievement of some degree of success under the plan reasonably possible. If the plan, however excellent and interesting in itself, was abandoned at an early stage of actual development, it is not included; but the fact that a part, or even in some cases the larger part, of a community as existing today was not developed according to the original plan or an intelligent extension of this plan does not alone warrant its exclusion. It is evident that the ordinary American cities as we find them today do not come within definition of "planned." Replanning of such communities, worth while as it is, likewise falls outside the scope of this study.

Finally, the word "community" is herein taken to mean an inhabited area with a substantial degree of unity and completeness in its utilization, either an isolated village, town, or city, or a satellite to a larger city from which it is comparatively distinct, or a suburb or section of a city having a recognizable character and life of its own and supplying a considerable range, though not necessarily by any means all, of its citizens' ordinary needs. In this third group, the selection of those communities to be dealt with has been more severe than in the others and really confined

to chosen examples of several subtypes deemed of particular interest, thus avoiding much reduplication.

Since this study is intended to be used by those practising in the United States, the detailed analysis has been confined to American communities, including one in Mexico and a number in Canada, where conditions are somewhat similar to our own. Furthermore, since obviously the value of this study is for the future, only communities arising in recent times, or at least having a direct bearing on modern conditions, are thus studied. So much has been written on foreign communities and on the historical aspects of planning that only a general chapter indicating the historical background of the particular subject in hand is included herein. Thus, of the larger cities of America, planned in part at least at an early stage, only Washington is given detailed treatment, since Washington, far more than any other American city, has actually followed its original plan.

While extended, strictly exact, analytical comparisons of various communities, planned and unplanned were quite out of the question with the time and funds available, and, in fact, appear to be in the nature of the case scarcely practical, an attempt has been made to find out whether each community has continued as first planned, how the planned communities have fared, and what they look like, that is, whether the plan has worked out well, both economically and esthetically. In several communities, it has been possible to compare the planned portions with the unplanned portions.

As already intimated, the goal is to discover what can be learned from experience that will aid in the future development of communities. That the opportunity for utilizing such information is great becomes apparent as soon as one surveys the recent establishment of new communities and of more or less self-contained additions to old ones. The period of such new ventures is by no means over; in fact there are indications that it may have only just begun.

The communities considered may be viewed comparatively from any one of several different angles. For one purpose, one approach to the problem, for another, a different basis of consideration will prove most useful.

For the purposes of this study which is directed primarily toward ascertaining the effect of planning, whatever the type of the community planned, the most important factor is the type of initiatory agency, with which is intimately involved the immediate objective. On this basis four main groups of communities may be established. As dealt with in this study these are, in order:

1. Communities developed by industry, interested primarily in an effective labor supply.

2. Communities developed by governmental agencies, interested either in (*a*) a labor supply for governmental projects in peace or in war, (*b*) the demonstration of a social ideal, or (*c*) the appearance and efficiency of a capital city.

3. Communities developed by real estate organizations, interested primarily in profit from the sale of land or houses.

4. Communities developed by philanthropic agencies, interested primarily in making a contribution to social welfare.

There are, of course, a number of communities in which the agency or objective partakes of the characteristics of more than one of these groups, or lies in an intermediate position between two, and its precise classification is difficult or impossible, particularly as between industry and other private interests. Furthermore, in some communities more than one of these types of agencies and objectives have been operative, either in succession or simultaneously. However, these complications need not confuse the emphasis in this study on the relation of the objective or the agency to the success of the planning of the community.

Another approach to the consideration of these communities may be according to relative location or degree of isolation. Thus, one may study the effective planning of self-contained cities, large or small; of satellite communities, dependent in a greater or less degree upon the parent city; and of suburbs or neighborhoods which are more or less completely integral parts of the greater city, whether within the same corporate limits or not.

A third approach may be made according to functional characteristics, grouping together those communities furnishing similar facilities, such as, on the one hand, purely residential areas and, on the other hand, communities providing also a successively greater range of facilities, including education, recreation, local business, a central administrative area, industrial sites, and a variety of others.

Closely related to this approach is that according to degree of openness of the residential area, differentiating between such types as apartments, row houses, detached houses on small lots, for incidental gardening, and small farms.

This study has attempted to list and examine as many as possible of the American communities that fall within the definition of a planned community given above. The procedure has been through library research, questionnaires, correspondence, a field survey, and compilation and study of data.

The outstanding resources of the Harvard Libraries of Landscape Architecture and City Planning and to a less degree, those of the Library of Architecture have been extensively used. A thorough search was made

in the files for references by subject, name, and general material, on all developments falling under the classifications of planned communities, cities, and villages; new towns; model towns, cities, and villages; garden cities, and the like. All relevant written material thus found was condensed for each community according to (1) objectives and principles, (2) location, (3) type of community, (4) area, (5) physical plan, (6) population, (7) housing, (8) methods of control (government and proprietary restrictions, etc.), (9) degree of completion, (10) status of the development (physically, economically, socially, etc.), (11) cost, (12) realization of objectives.

In order to supplement and complete the library information and bring it up to date, a set of four questionnaires was formulated for the planners, industries, developers, and public officials, respectively, connected with each development selected for study. Each of the four types of questionnaire was designed in relation to the functional capacity of the person, firm, or official to whom it was sent. Insofar as practicable, questionnaires were sent to all four of the parties interested in each development. In many cases, however, only one or two parties were in a position to give the desired information. Planners' questionnaires were designed to bring out factors relating to conception, purpose, design, and principles utilized in the planning of the development. Industrial questionnaires were intended to obtain data on industrial objectives and location, reasons for establishment of the community, its present status and character, and its function as part of an industrial program. Developers' questionnaires sought information similar to that for industry, adapted to realty objectives and conditions. Public officials were asked for information relating to administration and regulations, assessed valuation, effectiveness of the physical plan, stability of land use and values, administration, maintenance, traffic, and so forth. In addition, information from city planning offices near Cambridge was obtained without the use of questionnaires.

Correspondence was also carried on to augment questionnaires, and follow-up letters were utilized. The returns on the questionnaire were surprisingly large, as follows:

| | Sent out | Replies | Percent returned |
|---|---|---|---|
| Planners | 63 | 28 | 44.5 |
| Industries | 63 | 36 | 57.2 |
| Developers | 48 | 20 | 41.7 |
| Public officials | 93 | 47 | 50.5 |
| Total | 267 | 131 | 49.0 |

On the basis of the information compiled from questionnaires received, correspondence, and library information, a field itinerary was prepared to cover those developments which were deemed the most significant and from which the most was to be learned within the time available. As shown on the accompanying map, this field survey was limited to a circuit east of the Mississippi.

When information from all the above sources was in hand, compilations and analyses were made, forming the basis of the material herein presented. Although every effort was made to select for inclusion in the list of communities all the most interesting ones, the study can hardly avoid omitting or giving inadequate attention to a few, usually because of the inability to secure sufficiently complete information from communities not visited.

While the procedure outlined above cannot produce an extreme degree of accuracy in certain of the statistical aspects of the reporting, it was not felt that this would interfere in any material way with the correctness of the deductions and conclusions, since close comparative ratios were not attempted. Rather, it has been the prime purpose of this study to determine from authoritative sources and field observation what problems the communities considered had attempted to solve, the specific successes or failures in accomplishing their purposes over a period of years, and their relation to the scheme of urban life in general, that is, what they have offered toward the solution of the great problem of better living.

While no one simple topical arrangement of objectives for a study of planned communities can more than hint at the complex interrelated forces at work, the following outline is believed to be of merit for the purposes directly in view and has therefore been chosen for the general discussion in this study.

I. What is the population in planned communities receiving in physical and social facilities?

(*a*) Physical arrangement and convenience of the plan:

1. Location and access to a metropolitan center, work, shops, recreation.

2. Street lay-out—differentiation of street width and arrangement, economy of maintenance, utilities, policing, fire protection, etc.

3. Lots—size, shape, arrangement, provision and demand for area by population, allotment gardens.

4. Stability vs. convertibility of land use as planned and developed.

(*b*) Housing:

1. Light and air—orientation, house-lot relationship, spacing, yards, house and family densities per net and gross acre.

2. Type of housing—number of rooms, construction, appearance, and upkeep.

3. Rental and ownership—their effect.

4. Obsolescence and deterioration—their causes.

(c) Retention of identity:

1. Natural barriers protecting borders—topography, water, existing parks, cemeteries, school grounds, etc.

2. Artificial barriers created by planning.

3. Control of excess land protecting borders.

4. Articulation of the plan.

(*d*) Physical provisions affecting social factors as encouraged by the plan:

1. Recreation in parks, playgrounds, and other public facilities.

2. Community activities.

3. Health, well-being, and contentment of the population.

(*e*) Self-sufficiency of development in—

1. Employment.

2. Shopping and trading.

3. Community life—churches, schools, theaters, recreational activities, and spirit.

(*f*) Amenity:

1. The decency and self-respect of the community.

2. Segregation from and protection against nonconforming uses, creating "mutual unobnoxiousness" and livability.

3. Beauty—in form and arrangement of architectural and landscape treatment.

II. Have the objectives and details of the plan been adhered to in the development? Where have they failed, if at all, and if departed from, for what reasons?

III. Has preplanning accomplished by physical means what zoning, building, platting, and housing ordinances have attempted to do by municipal legislative regulation, noting that poor planning may, like poor ordinances, defeat the purpose it was intended to serve, and that ordinances depend on the plan and vice versa? The following tests of accomplishment are considered:

(*a*) Character of the population.

(*b*) Character of the development.

(*c*) Stability of land use.

(*d*) Stability of land values.

IV. If not by physical arrangement, then have regulatory measures in the form of private restrictions and covenants and/or municipal restrictions been used as (1) a legal supplement or (2) as the controlling factor in preserving character, value, and so forth?

V. What effect has the structure of municipal government and/or that of private or proprietary control had upon the development?

VI. Have the objectives of industrial and residential communities been realized. Has planning of industrial communities accomplished the objectives desired by industry, of lower labor turn-over, more contentment, attraction of a higher and more stable type of labor, and/or the improvement of existing labor and living conditions, noting that industry must, under normal conditions, offer a degree of stability to the worker before the success of any planned community can be fully tested?

VII. What has been the driving force in the establishment of planned communities and what may be expected as the coming policy of planned communities in the future?

106099—40——2

# PART I—SECTION 1
# HISTORICAL BACKGROUND

City planning, as it is generally understood today, is a technique dealing primarily with problems of existing cities and control of city growth, and with the correction of evils which have grown up within our urban centers. The creation of new towns and cities, however, has since earliest times formed an important part of the planning technique, not because of the quantity of new towns created but owing to the opportunity it offers of applying to raw land the principles which underlie the conception of what a community of people should be under a given set of circumstances. It is this latter field of endeavor with which the present study is concerned, in an effort to bring together and evaluate the significance of planned communities in our urban scheme of living. The consistency of the elements of the planning concept appears clearly when planning has had a free field, but is blurred in replanning by previously existing, unrelated, and outmoded developments. The planned community, as distinguished from communities in general, may be considered as that which has been consciously created to serve some predetermined purpose and has had incorporated into its conception some form of comprehensively organized and articulated plan for systematic physical development. The primary purpose in briefly reviewing here the planned towns of periods prior to the contemporary one is not to present any new material. This field has been adequately covered by several exhaustive treatises. It is rather to serve as a background for the study to follow.

Many of the ancient and medieval towns have disappeared as living organisms. When the purpose which caused these towns to be built had disappeared with the decline of each civilization and culture, the function which they served disappeared and with it, the town, except where they were so located as to adapt themselves to a new function and order. The town thus emerges as a functional creation closely related to its location. The Roman camps and fortified bastides served their purpose admirably in the conquest and the retention of colonial frontiers, but had little relation to the later periods of commerce and trade except as the towns happened to be favorably situated to serve in this new capacity. Even here, the fortifications which surrounded them as a necessary adjunct for protection became barriers which created congestion and overcrowding. The same condition applies today to our rural villages whose function as a small center for the surrounding farms has been reduced or disappeared with technological change in favor of the larger metropolitan unit and has not been replaced by any other use.

The history of planned towns is not a history which can be classified into the well-defined categories of historic architectural styles. The objectives and the cultural background, rather than any style of planning design, and the focus of the culture as evidenced by the dominant motifs are the matters of primary interest in this brief survey of historical examples. However, every civilization went through its own period of city building in each of which the motives and methods may be studied and certain aspects noted as having a significant bearing on current problems.

It is interesting that Kahun, described as the earliest planned town yet to be discovered, is, curiously enough, closely related to many of the planned communities found in the United States today, not in its physical aspect, but in its purpose to house the workmen engaged in building the pyramid of Illahun in Egypt during the third millenium B. C. The housing consisted of contiguous double tiers of dwelling units of four to five rooms each, without yards and facing on narrow streets. Although a temporary town, evident care was employed in laying it out. Here is found the first evidence of street drainage in the provision of shallow stone channels in the center of the streets for the removal of waste water. However, most of the planning of cities in Egypt and Mesopotamia was closely associated with religion and seats of government, and was confined largely to the construction of great approaches to the temples and palaces. These buildings occupied dominant sites, and little attention was paid to the homes of the people. Fortifications surrounded the cities as in the case of Babylon, which, in the fifth century B. C., Herodotus tells us, was entirely surrounded by two walls, some 340 feet in height and 90 feet thick, and a wide moat fed by the River Euphrates, which bisected the city. As the description by Herodotus was based on a visit made some 70 years after the walls had been razed by Darius, the accuracy of his observation may be questioned.

The first name to be connected with the art of city building was that of Hippodamus, who, according to Aristotle, first "introduced the principle of wide straight streets, and, first of all architects, made provision for the proper grouping of dwelling houses and also paid special heed to the combination of the different parts of a town in a harmonious whole centered

round the market place." He is accredited with the layout during the fifth century of the new towns of Piraeus, Thurii, Rhodes, Selinus, and Cyrene. Aristotle's own conceptions of the characteristics of an ideal city are of interest, his primary consideration being the ease of communication with the sea and the mainland and "so far as circumstances permit, with all parts of the country equally." After this, as to the site itself, he places *health* as inevitably first. "The healthiest cities are those which stand upon a slope inclining to the east and so to the winds which blow from the quarter of the sunrise." Secondly, he emphasizes the need of a favorable situation for "political and military action * * * easy of egress for citizens and hard for enemies to approach or blockade." Third, he holds as essential an adequate water supply from "wells, fresh springs, or cisterns." "The next best aspect is one that is sheltered from the north wind, as cities so sheltered enjoy milder winters."

The Greek period following Hippodamus and Aristotle saw the beginnings of governmental control in the form of building regulations, which required the property owners to repair and maintain the abutting street as well as their own property. Laws pertaining to the widths of streets appear to have been used in Pergamum during the fourth century B. C. Vitruvius, in the first century B. C., set down various criteria relating to the ideal city, saying "The plan of a city should not be square, nor formed with acute angles, but polygonal, so that the motions of the enemy may be open to observation. A city whose plan is acute-angled is with difficultly defended, for such a form protects the attacker more than the attacked." Here is one of the first statements of diagonal planning. However, Vitruvius, like Aristotle, did not consider the street system but rather the factors of location and fortification of the periphery as the primary factor in city design. The principles of health, sanitation, orientation, light and air, and the healthful disposition of recreational provisions were problems perhaps as fully grasped during the first century B. C. in Rome as they are today.

Many new planned cities appeared during the Macedonian period of Alexander, including Priene, which provided for a population of about 4,000 persons and has been almost wholly preserved. Most of the towns of this period, as in previous periods, were established to colonize the conquered or newly acquired domains, and the plans reflect the influence of military conceptions and occupation in their ease of lay-out, and clear definition of building sites, through the use of rectangular blocks and checkerboard street systems. Here, the temples, the Agora, and theater received the favored sites, with little or no provision for gardens or open spaces except in the market square. One factor causing the lack of attention to living quarters of the inhabitants was that life in the semitropical climate and under the Greek culture was one lived not in the home but in the public places of trade and recreation. The great cities of Athens and Sparta grew much as our cities have today, with little attention given to planning except in the places of public assembly.

The Roman towns reflect to an even greater extent the military influence of the Roman camp, following almost consistently the checkerboard plan, with little attention given to esthetic considerations except for the two main streets, which were often colonnaded. These divided the town into four quarters, which were further divided by narrow streets into rectangular blocks. The forum and public buildings were located with little reference to the general plan, but usually near the intersection of the main streets. Traces of these colonial towns are found in all the provinces, in large numbers, throughout the old Roman Empire. Rome itself, although said to have originated in a plan for Palatine Hill, derives its past glory from the rebuilding which replaced the maze of crowded slums with monumental public structures. As in Greece, the density, coverage, and continuous frontage of dwellings were very high, even in the best of the smaller communities. One exception which may be cited is in the town of Silchester in England which, although laid out in typical Roman fashion by Roman surveyors, was built up by native builders according to the culture of Britain. The result was that detached dwellings surrounded by orchards and gardens adorned the blocks or insulae instead of a continuous frontage of Roman houses.

It is worth noting the further evolution of public ordinances in attempting to cope with the physical disorganization of the private section of Rome. Beds of streets were protected to prevent the projection of buildings, industry was prohibited in the central districts, and building height was regulated, first by Augustus to 70 feet, later by Nero to twice the width of the street adjoining. The ancient cities of India and the Orient are of interest here primarily as an indication that the planning of cities was practiced generally throughout the civilized world. Pataliputra (Patna), Angkor-Thom, and Ankor-Vat are three of the best-know examples in India and Indo-China. The ancient Hindu sacred writings give an indication of the laws and regulations relating to the planning of their cities as well as the religious background against which they were built. They state that the town was to be first laid out and only then the dwellings were to be planned. A violation of this rule indicated an evil portent. Trees were to be planted first and the "premises" erected afterward, "otherwise they will not look graceful and

seemly." The height of dwellings was regulated according to the rank of the inhabitant and the width of the street. Open space around the buildings was regulated, narrow alleys were required at the rear of the houses for the removal of waste. Sanitation, irrigation, and drainage were apparently developed to a high level in order to support the million persons said to have inhabited Angkor-Thom.

Regarding the planning of new towns in ancient Dekkan (southern India), Mr. C. P. Venkatarama Ayyar, in his book Town Planning in Ancient Dekkan, says:

> There is a marked uniformity in methods in the planning of Indian cities, new towns being generally planned on the lines of the old cities. According to tradition the extent of a city was preferably nine miles each way or at least in length. The city is divided generally into three portions, *viz*, the outer, the intermediate, and the central. And each part has its own parks, tanks (for drinking water supply and bathing), public spaces, and streets. Such a division is important for the proper distribution of castes, trades, and occupational groups. Taking the outer city, there are first the wide open areas where horses and elephants are trained. The artifical forests, the ditch, and the fort are then planned for the entire city. These features enclose an extensive area, and open spaces, residential quarters, and streets are planned with due regard to the extent taken up and other subsequent improvements and extensions that may afterwards come in.

It is interesting to find in these ancient cities a rural belt somewhat similar to our present-day "greenbelt." Mr. Ayyar, in speaking of the ancient city of Madura, says:

> This rural belt round the city was a characteristic feature which gave it (the city) a desirable completeness and finish. Where the town ends, the country begins. It marked the natural boundaries of the ancient city and provided for possible development of the suburb in the future. The cornfields and the open roads with avenue trees gave healthy rural advantages to urban areas, and presented a sight at once delightful and refreshing. The rural area provided beautiful surroundings, the city in the midst of open fields presenting the appearance of a central jewel set in emeralds.
>
> And not only from the sanitary point of view, but also from the economic and the social standpoints, this rural area round the city formed an invaluable advantage. To the busy man of the town there was always the attraction of the countryside, where he could go at pleasure and enjoy the natural scenery and gain that liberal culture which comes of an intimate knowledge of natural things like the flowers, the birds, and the streams. And to the peasant, the accessibility to the city would be a welcome relief from the dull tedium of an agricultural life.

Peiping offers an example of fortified rectangular planning, where scale and relationship of parts were carried to a fine degree of perfection as the capital of Kublai Khan's vast Mongol empire of the thirteenth century A. D.

The medieval period has been variously described by authorities as one either of town-planning neglect or of conscious design which utilized crooked streets of varying width and irregular squares to obtain the picturesque street vistas which are characteristic of the medieval town. This latter view may be open to question, in general, for the examples of the so-called bastides or new fortified towns which come down to us reflect the regular planning of the Roman camp rather than the elaborate irregularity of the medieval city. However, it has been pointed out that they may have been planned in a series of parts and that the radial roads from the market place to the periphery and the encircling roads resulting from the town fortifications resulted on the whole in a more convenient arrangement for circulation than can be realized by the best checkerboard systems. Certainly, the ring streets which have resulted from the location of one or more concentric walls have resulted in giving a unified organization to the town which might otherwise have had a jumble of streets, while the necessity for easy access to the walls from the center often created a system of radial streets. It is from these walled cities of the Middle Ages that the value of these ring streets or circumferential thoroughfares has been realized. The Middle Ages, however, were not essentially an urban period; and the town, instead of representing the ideal of life as it did in the Greek and Roman periods, was rather the abode of the lowest economic groups, a weapon with which to hold the frontiers against invasion, a place of refuge, or a center from which to extend a new culture to the conquered. New towns established in newly acquired territory were often given special privileges of free exercise of their affairs by the overlords, who thus encouraged new settlers to till the soil nearby, at the same time as they utilized them as armed forces in case of invasion. Such towns sprang up throughout England and southern France during the thirteenth century from the Atlantic to the Mediterranean. Many of these were located near deep water or on navigable rivers. The German monarchs followed a similar policy in founding bastides, and these towns have formed the framework around which later development took place. In general, they followed the square pattern of the Roman military town, though this was probably because similar problems had to be solved rather than because of the influence of Roman tradition. French examples of this period include Montpazier whose block and lot pattern resembles the gridiron system used today. An arcaded market square at the center diagonally related to the church square formed the central motif. The small lots of about 20 by 55 feet were apparently completely built over, adjoining on the sides and separated from each other at front and rear by 24-foot streets and 6-foot lanes leading to the court.

It is logical that the Renaissance period should have found its birthplace in Italy. The Gothic period of architecture had never been more than a superficial cul-

ture in Italy. The city state had been established and the princes vied with each other for magnificance. Examples of the classical culture were on all sides; and the infiltration of Greek scholars and craftsmen from the East, culminating with the fall of Constantinople in the middle of the fifteenth century, brought a revival of classic learning, the architectural principles of Vitruvius, and a concept of life as expounded by Aristotle. The work in this period of revival was confined at first to monumental churches, palaces, and civic buildings, but these principles of design were soon applied to the surroundings, resulting in a monumental and symmetrical form of civic design applied to building groups, converging thoroughfares, and plazas. With the passing of the need for fortified towns, the nobles were developing the villa in place of the fortress, and garden architecture developed.

However, most of the planning activity of Italy was confined to the rebuilding and extension of existing cities. The period is filled, however, with many designs for new cities, which, according to Patrick Abercrombie in his book *Town and Country Planning*, "fall generally into two broad groups—those which have a social basis and in which the city is a mere envelope for a new society, and those which are based upon defense and in which the city is sometimes of less importance than its enclosing fortifications." Examples of these ideal cities are Scamozzio's design which takes the form of a polygonal town heavily fortified, with a rectangular street system and symmetrically placed plazas. In France, Perret de Chamberys's ideal followed a radiating pattern of building groups symmetrically arranged and surrounded by circular fortifications, while Bernard Palissy was advocating "square and regular planning in every part of the city." Others, such as More's Utopia, Andreae's Christianopolis, and Bacon's Atlantis, got little further than elaborate descriptions. More recognized the town as a growing organism in advocating the control of land adjacent to the city proper where the city would reserve the right to lay out new developments.

In France, the influence of the Middle Ages was deeply rooted, and it was not until the 17th century that the Renaissance emerged from its transitional stage. Aside from the monumental rebuilding which took place in existing cities, several new towns were built, notably Sully's Henrichmont in 1609 and Richelieu. The latter, although built on the site of the small village where Cardinal Richelieu was born, is completely designed. It is interesting in its disposition of the Place des Religieuses at one end of the rectangular plan, and the Place du Marché at the other, connected by a monumental thoroughfare terminating in monumental entrances across the moat. As at Richelieu, many other new towns, including Berlin, Mannheim, Karlsruhe, and others, were laid out as adjuncts to the palaces of the princes in Germany. St. Petersburg (Leningrad) was laid out by Peter the Great in 1703 and completed according to his plan within the space of a few years. The plan of Karlsruhe, 1715, marks a complete departure from the classical influence of street layout and reflects the effect of garden architecture on town planning, of planting and park areas and tree-lined avenues and boulevards as a recognition of natural elements in civic design.

In England, the effect of the grand style of planning was much less felt. The political situation culminating in the execution of Charles I prevented expenditures not only for competing with the magnificence of France and Italy but for the orderly reconstruction of London after the fire of 1666. While Wren's plan for the rebuilding of London is an example of replanning, its modern conception of the disposition of the radial and gridiron streets and places and the completeness of the design reflect the genius of the designer and conditions which approached a new layout on raw land.

In America, the early planning of new towns follows in general the influence of the checkerboard or gridiron system. The original portion of Philadelphia laid out in 1682 by Thomas Holme extended from the Delaware to the Schuylkill River in a regular grid system with two main thoroughfares intersecting on what was planned as an open square. Four other squares were provided, one in each quarter. The plan has, of course, been long since absorbed in the monotonous repetition of miles of the same thing, but its influence still remains as there has been little change in its original area. While four original park areas remain intact, the central park has long been completely covered with ten acres of misplaced city hall, which now forms the focal point of the Fairmount Parkway.

Washington is, of course, the outstanding example of a planned city in America. The scale on which it was planned, its spaciousness, and the genius with which the radial street system and round points were applied to the avenues have made it one of the easiest cities in the world to adapt to the automobile traffic were there not other complicating factors. The plan suffers chiefly from two organic defects: (1) the absence of relationship between the checkerboard plan and the superimposed radial thoroughfares has created acute-angled intersections resulting in triangular building sites, which although they do add to the effect of openness of the street, are uneconomical for building, and park areas, costly to maintain and often too small for efficient use; and (2) the large deep blocks in certain sections, while not bad in themselves, have created the problem of the alley slum.

It is interesting to note that the street plan did not adapt itself well to the era of the streetcar. This fact in indirectly reflected in the exceptionally high percent-

age of automobiles used by Government workers, which, together with the concentration of the Government offices around the Mall, has created a traffic problem both in relation to parking and to movement within the governmental and business district that is difficult of solution. Further discussion of Washington will be found in chapter IV.

Other examples of early planned towns in the United States are to be found in Reading, Pa., Buffalo, N. Y., Savannah, Ga., Manchester, N. H., Paterson, N. J., Madison, Wis., Indianapolis, Ind., Detroit, Mich., New Orleans, La., Annapolis, Md., and Williamsburg, Va. Most of them have since far outgrown their original plan.

Reading was laid out by Thomas and Richard Penn, sons of William Penn, and follows in its general scheme the plan of Philadelphia without incorporating any of its better features. John Nolen says of the original plan in his "Replanning Reading" that the "rectangular system of streets which is so characteristic of Philadelphia was reproduced at Reading, notwithstanding the fact that, while the site of Philadelphia is comparatively flat, that of Reading is hilly. * * * But the admirable feature of open green squares at regular intervals which Penn provided for Philadelphia is altogether lacking in the plan for Reading. It took no account of natural features, of topography, of grades. It provided no diagonal streets, nor did it manifest any of the foresight shown by the Washington-L'Enfant's plan for the National Capital. * * *"

The original plan of Buffalo was laid out in 1803–1805 by Joseph Ellicott, surveyor and local agent of the Holland Land Company. It covered an area of approximately one-quarter square mile and in 1805 had a population of less than 2,000. The central feature of the plan consisted of a square with four diverging radials superimposed upon a gridiron pattern. Its chief interest here is the influence which the diagonals have had on the subsequent growth of the city. Madison, Wis., was planned as the capital city for the newly created Territory of Wisconsin in 1836. It has often been stated that its plan was influenced by that of Washington, D. C., but beyond the central square at the intersection of two broad avenues, 8 rods wide, and four narrower diagonals radiating from the corners, it is made up entirely of a gridiron pattern and resembles the plan of Buffalo rather than that of Washington. The unique site itself is ideal, but it was entirely ignored with the exception of the location of the capital grounds, in laying out the town. Savannah, Ga., represents perhaps one of the most successful of the early town plans of the gridiron pattern. The town was laid out by Colonel Bull and General Oglethorpe in 1733. Each male settler was given about 50 acres of land including a town lot, a 5-acre garden lot, and a 44-acre farm. The original plan contained 25 small open squares, 24 of which are preserved today, greatly to the benefit of the city.

Indianapolis follows the same sort of plan as Buffalo and Madison. Its square and radials have been a distinct benefit in handling the traffic situation. Unlike Madison or Buffalo, however, it had an unlimited area of level land in all directions over which to spread.

Detroit has little left of its hexagonal plan, laid down by the Governor and judges in 1807, after the fire in 1805. The plan consisted of a repetition of a hexagonal street system enclosing a series of radials terminating on a central open space. A small portion near the lake front had been constructed, including Michigan Avenue, Cadillac Square, and Washington Boulevard, when the plan was abandoned, as too difficult and expensive of execution. Williamsburg, Va., is of interest in its regard for the relationship between the college and governmental buildings and in its reconstruction in the last decade.

Another old planned town of somewhat different character may be mentioned here. In 1807, Tallmadge, Ohio, was founded as a religious community. The site was 5 miles square and contained 15,225 acres of rural land. The plan consisted of a village square of 7½ acres in which a church and town hall were provided. Other public buildings, including a library, hotel, and stores, were erected over a period of years around the square. The square was connected to the four corners of the township by radial roads. Although the radials and square remain, subsequent development has largely disregarded the original plan. The Erie Railroad now runs diagonally through the township. Portions of the south and west sections are built up and have been annexed by Akron.

From a cursory study of towns planned in the past, certain conclusions bearing upon the objectives of this study stand out.

A. Planned towns were largely created for the following reasons:

1. As seats of government, (2) as military outposts for colonizing newly acquired frontiers, (3) as centers of protection from invasion, (4) for religious and political purposes, (5) as ports on deep water or head of navigation, (6) at crossings of caravan routes, (7) at water-power sites, (8) at bridges and straits, (9) in a cool climate, and (10) in America, by land development companies for profit. Each reflects in its dominant motif that function and culture of its particular period: walls, agora, cathedral, theater, fora, castle, palace.

B. There was no continuing policy of planning throughout any long period. The consideration of the plan as a finished product failed to recognize the town

as dynamic. Thus, no provision was made for the disposition of future growth at the periphery.

C. Where these planned towns continued to grow, due to a change in or expansion of their original function, the same type of unplanned and unorganized development took place at the periphery that is occurring today, until the value of the plan was submerged or lost in a circle of haphazard development. The evil of overcrowding of the medieval city was more often the result of growth during a later period than it was a misuse during the life of the town in its own planned-for period. For example, walls no longer needed, but too costly to remove, caused congestion and overcrowding within the original town.

D. These planned towns usually reflected the genius and enterprise of one person or small group and had little to do with the desires of the people as a whole. When this influence was removed, the original concept was lost or submerged in a planless period of development. However, many towns became quasi-independent and were given or took unto themselves a greater or lesser degree of sovereignty, operating through a council, the guilds, and the church.

E. The Greek, Roman, and other early cultures recognized the principles of geographical and site location, street design, land use, building height, sanitation, orientation, and city administration to a degree which may be studied with profit today. To fit their own conditions, they developed techniques which were more progressive than some of our own methods have been until recently. Our basic conception of many factors can be traced back to the ancient and medieval periods, namely: (1) The civic center as an outgrowth of the acropolis, agora, forum, and market place; (2) building regulations as to building lines, height, wall thickness, type of construction: (3) relation of street width to building height; (4) relation of the size of the market place to the population; (5) zoning for use and height; (6) health, light, and orientation; (7) differentiation of street widths; (8) the street vista and the open square; (9) public recreation as a public responsibility; (10) the radial and circumferential street system; (11) the checkerboard which was typical of all cultures.

F. Additional ideas derived from the Renaissance have been (1) the boulevard, (2) use of street trees, and (3) the park as an integral part of the city plan.

G. The major contributions of the present age which are essentially new include (1) the systematic utilization of the contour street, (2) the Garden City theory, (3) the consideration of the economics of city building, and (4) an increasing consideration for the welfare of the masses.

The advent of the industrial era and modern life with the resulting congestion of urban centers has brought about a new objective which the planned town has been asked to fulfill and consequently, a new conception of its significance. It is with this period that this study is primarily concerned. There have been during this period the same attempts to depict the ideal, and concrete attempts at these ideals became known as model towns. In defining a model town, Grosvenor Atterbury has set forth the following principles, which apply as well to the somewhat broader conception of the planned community as considered in this study. While the particular interest of this study is in evaluating planned towns which have functioned over a period of years, his statement indicates what should be found in any of them before they can be considered as completely meeting the situation.

1. The most distinctive feature is the essential element of collectivism upon which the planned town should be based—collective design, development, and control.

2. The aim should be toward higher standards and more efficient handling of land development and distribution.

3. The science and art of town planning and good housing should be applied.

4. The model town should demonstrate to the individual the advantages of a reasonable self-restraint, of the subordination of his own esthetic impulses to a general esthetic scheme.

5. It should cause actual money saving in lay-out and at the same time provide better conditions than could exist under "individual methods."

6. No experiment or demonstrations should be made that could only be duplicated with the aid of philanthropy, charity, or paternalism, or in which collective action might not be equally possible or safe. It must be organized and developed on a business basis and must succeed as such.

In England, the Garden City, as conceived by Ebenezer Howard, has been defined as "a town planned for industry and healthy living; of a size that makes possible a full measure of social life, but not larger; surrounded by a permanent belt of rural land; the whole of the land being in public ownership or held in trust for the community." The two examples of the Garden City in England are well known.

The United States has thus far failed to produce either a model town or a Garden City to the full extent of the above definitions. Most often absent are the considerations of Item 6 above, as stated by Mr. Atterbury, the provision of a "greenbelt," and the public ownership of land as in the English Garden City. The recent governmental projects referred to later are attempting to realize most of the Garden City principles, while certain single-tax colonies may be cited as examples of a modification of the public ownership principle. The majority of the communities studied have, however, well fulfilled one or more of the stipulations.

# PART I—SECTION 2
# CASE STUDIES

The following chapter is devoted to a discussion of 29 communities selected from the 144 which were included in the study.[1] These discussions vary in length and detail according to their nature, significance, and the data available. It should be noted that these communities are representative of the best in their respective classifications and do not include the "company town" and the "mill village" as they are generally pictured. For the purposes of clarification and convenience, these communities have been arranged in the text according to the nature of the founding agency, and subdivided within this classification according to their nature as separate communities or suburban communities. The complete list of communities follows, those discussed in this chapter being indicated by an asterisk.

I. Communities developed by industrial agencies:
  (*a*) Separate communities:
    Alcoa, Tenn.* (aluminum mfg.).
    Allwood, N. J. (textiles).
    Arvida, Quebec (aluminum).
    Atco, Ga. (textiles).
    Brantford Garden Village, Ontario (steel).
    Chickasaw, Ala. (shipbuilding).
    Chicopee, Ga.* (textiles).
    Dolbeau, Quebec (pulp and paper).
    Erwin, Tenn. (railroad shops and pottery).
    Espanola, Ontario (pulp and paper).
    Fairfield, Ala.* (steel, and coal mining).
    Gran'mere, Quebec (lumber).
    Happy Valley, Tenn. (textiles).
    Hershey, Pa. (chocolate).
    Hopedale, Mass.* (textile machinery).
    Iroquois Falls, Ontario (pulp and paper).
    Kapuskasing, Ontario* (pulp and paper).
    Kaulton, Ala. (lumber).
    Kenogami, Ontario (pulp and paper).
    Kincaid, Ill. (coal mining).
    Kingsport, Tenn.* (diversified industries).
    Kistler, Pa. (brick).
    Kohler, Wis.* (plumbing fixtures and pumps).
    Longview, Wash.* (lumber and diversified).
    Ludlow, Mass. (textiles).
    Lynch, Ky. (coal mining).
    Marysville, Mich. (automobiles).
    Midland, Pa. (steel).
    Morgan Park, Minn. (steel).
    Ojibway, Ontario (steel).
    Overlook Colony, Claymont, Del. (chemicals).
    Peacedale, R. I. (textiles)
    Pine Falls, Manitoba (pulp and paper).

I. Communities developed by industrial agencies—Continued.
  (*a*) Separate communities—Continued.
    Pullman, Ill. (Pullman cars).
    Riverdale, Rome, N. Y. (brass and copper mfg.).
    Rosita, Coahuila, Mexico (coal mining and byproducts).
    Silvertown, Ga.* (textiles).
    Temiskaming, Quebec (pulp and paper).
    Torrance, Calif.* (diversified industries).
    Tyrone, N. Mex. (copper mining).
    Vandergrift, Pa.* (steel).
    Westfield, Ala. (coal mining).
    Whitinsville, Mass. (textile machinery).
  (*b*) Suburban communities:
    Billerica Gardens, Mass. (railroad shops).
    Eclipse Park, Beloit, Wis. (scales).
    Firestone Park, Akron, Ohio (rubber).
    Goodyear Heights, Akron, Ohio* (rubber).
    Indian Hill, Worcester, Mass.* (abrasives).
    Janesville (including Overlook Heights), Wis. (automobiles).
    Loveland Farms, Youngstown, Ohio (steel).
    North Plymouth, Mass. (textiles).

II. Communities developed by governmental agencies:
  A. War housing:
    (*a*) Separate communities:
      Brooklawn, (Noreg.), N. J.* (shipbuilding).
      Cradock, Va.* (shipbuilding).
      Hilton Village, Va.* (shipbuilding).
      Mare Island, Calif. (shipbuilding).
      Yorkship Village, Camden, N. J.* (shipbuilding).
    (*b*) Suburban communities:
      Atlantic Heights, N. H. (shipbuilding).
      Union Park Gardens, Wilmington, Del.* (shipbuilding).
  B. Power, reclamation, and similar projects:
    Separate communities:
      American Falls, Idaho (rural).
      Balboa, Panama, C. Z.
      Boulder City, Nev.*
      Norris, Tenn.*
  C. Demonstration projects:
    Separate communities:
      Greenbelt, Berwyn, Md.*
  D. Rural projects:
    Separate communities:
      Delhi, Calif. (State of California).
      Durham, Calif. (State of California).
      Penderlea Homesteads, N. C.
  E. Capital cities:
      Washington, D. C.*

III. Communities developed by real-estate agencies:
  (*a*) Separate communities:
    Clewiston, Fla. (also sugar and celotex manufacture).
    Coral Gables, Fla.
    Garden City, N. Y.
    Port Mann, British Columbia.

[1] The complete manuscript for this monograph, including 70 additional case studies, is available for reference at the National Resources Committee and the Library of the Department of Regional Planning, Harvard University.

III. Communities developed by real-estate agencies—Con.
(*a*) Separate communities—Continued.
Riverside, Ill.*
San Clemente, Calif.
Shaker Heights, Ohio.
Venice, Fla.
Westover, Mass.
(*b*) Suburban communities:
Capilano Estates, West Vancouver Lands, Vancouver, British Columbia.
Country Club District, Kansas City, Md.*
Greenway Parks, Dallas, Tex.
Laurelhurst, Portland, Oreg.
Myers Park, Charlotte, N. C.
Palos Verdes Estates, Calif.*
River Oaks, Houston, Tex.
Roland Park, Baltimore, Md.*
St. Francis Wood, Calif.
Sawyer Park, Williamsport, Pa.
University Endowment Lands, Vancouver, British Columbia.
(*c*) Rural communities (separate):
Lomax, Ill.
Ojibwa, Wis.
Rancho Santa Fe, Calif.
IV. Communities developed by philanthropic and miscellaneous agencies:
A. Communities developed by philanthropic agencies:
(*a*) Separate communities:
Columbus, Ky. (relocated).
Mariemont, Ohio.*
Radburn, N. J.*
(*b*) Suburban communities:
Chatham Village, Pa.*
Forest Hills Gardens, N. Y.*
B. Communities developed by miscellaneous agencies:
Separate communities:
Arden, Del. (rural single-tax colony).
Biltmore, Asheville, N. C. (private estate).
Fairhope, Ala. (single-tax colony).
Zion City, Ill. (religious).

The above 99 communities constitute the list of detailed case studies. The list below includes 45 additional cases appearing in various computations in section 3, making a total of 144 communities which form the basis for the study.

Atascadero Estates, Calif.
Audubon Village, Amherst, N. Y.
Belleair, Fla.
Belle Haven City, Calif.
Bingham, Utah
Borden Park Estates, Ottawa, Ontario.
Buckman Village, Chester, Pa.
Cedarvale, Toronto, Ontario.
East Youngstown, Ohio.
Ellsworth, Pa.
Greendale, Milwaukee, Wis.
Greenhills, Cincinnati, Ohio.
Hamilton, Ontario (War Veterans' Village).
Harriman, Bristol, Pa.
Hawkesbury Garden Village, Ontario.
Indrio, Fla.
Kaska, Pa.
Lannett, Ga.
Laurens, S. C.
Lawrence Farms, N. Y.
Le Claire (Edwardsville), Ill.
Lens, Saskatchewan
Marcus Hook, Pa. (Viscose Co. Village).
Marysville, N. B.
Mossmain, Mont.
Nassau Shores, Long Island, N. Y.
Nemacolin, Pa.
Paruco Park, Jeannette, Pa.
Pacolet, S. C.
Pelzer, N. C.
Pineville, N. C.
Ponce de Leon Springs, Fla.
Rio Vista, Fla.
Rockledge, Fla.
San Jose, Fla.
Seneca Heights, Olean, N. Y.
Shaughnessy Heights, British Columbia.
South Clinchfield, Va.
Sparrows Point, Md.
Sun Hill, Chester, Pa.
Wayzata, Minn.
Westinghouse Village, Pa.
Whitmire, S. C.
Windsor Farms, Richmond, Va.
Wyomissing Park, Pa.

An additional list of 53 developments comprises interesting examples of a similar nature which are not otherwise included.

Berwick, Pa.
Brendonwood, Ind.
Broad Acres, Glens Falls, N. Y.
Cleland, Wilmington, Del.
Cornerbrook, Newfoundland.
Danielson, Conn.
Dawson, Colo. (never developed).
Dundalk, Md.
East Valley Forge, Pa. (never developed).
Eaton Rapids, Veterans of Foreign Wars Village, Mich.
Echota, N. Y.
Elmwood Park, Bethlehem, Pa.
Fort Churchill, Manitoba.
French Village, Philadelphia, Pa.
Gary, Ind.
Grovemont, N. C.
Gwinne, Mich.
Homewood, Brooklyn, N. Y.
Hopewell, Va.
Indianhead, Md.
Jerome, Ariz., Mining town near (never developed).
Kelsey City, Fla.
Lakeshore Highland, Wickham Havens, Oakland, Calif.
Langloth, Pa.
Maximo Estates, St. Petersburg, Fla. (never developed).
Memorial Garden Village, near Ancaster, Ontario.
Mill Green, Bridgeport, Conn.
Moosehcart, Ill.
Nanticoke, Pa.
Nela Park, East Cleveland Ohio.
New Holland N. C. (never developed).
New Salem, Ill. (restoration).
Niagara Glen Heights, Ontario.
Oakbrook, Reading, Pa.

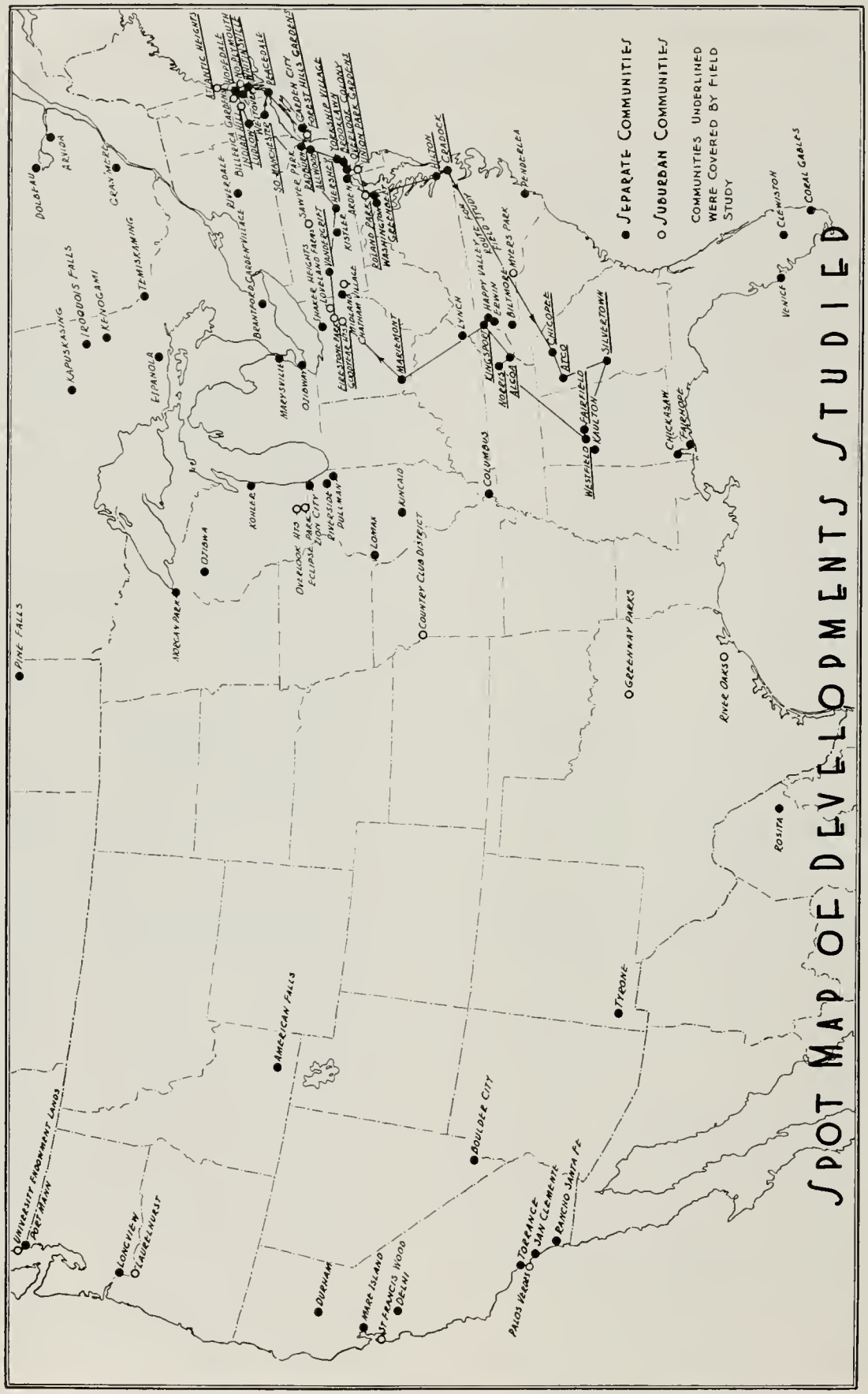

SPOT MAP OF DEVELOPMENTS STUDIED
SEPARATE COMMUNITIES
SUBURBAN COMMUNITIES
COMMUNITIES UNDERLINED WERE COVERED BY FIELD STUDY
UNIVERSITY EXPERIMENT LANDS
PORT HURON
LONGVIEW
LAURELHURST
DURHAM
MAR ISLAND
ST FRANCIS WOOD
DELMI
AMERICAN FALLS
BOULDER CITY
PALOS VERDES
TORRANCE
SAN CLEMENTE
RANCHO SANTA FE
TYRONE
ROSITA
RIVER OAKS
GREENWAY PARKS
COUNTRY CLUB DISTRICT
COLUMBUS
LOMAX
KINCAID
CHICKASAW
FAIRCROFT
WESTFIELD
FAULTON
ATCO
CHICOPEE
SILVERTOWN
MYERS PARK
DENVER
VENICE
CORAL GABLES
CLEWISTON
PINE FALLS
NORCAY PARK
OTTOMA
KOHLER
OVERLOOK HTS
ECLIPSE PARK
ZION CITY
RIVERSIDE
PULLMAN
MARYSVILLE
OTTOWA
BRANTFORD
GARDENVILLE
ELPANOLA
KAPUSKASING
IROQUOIS FALLS
KENOGAMI
TEMISKAMING
CRANBROOK
DOLBEAU
ARVIDA
DIVERDALE
DILLERICA GARDENS
SAWYER PARK
GARDEN CITY
FOREST HILLS GARDENS
FOREST VILLAGE
ATLANTIC HEIGHTS
WOODDALE
MARGEMONT
LYNCH
HAPPY VALLEY
KING SPOOK
EERWIN
BUTNORE
KOLB STUDY
VILTON
CRADOCK
ROLAND PARK
WASHINGTON GREENHEIGHTS
OVERLOOK GARDENS
UNION PARK GARDENS
YORKSHIRE
ARDSLEY
KOSLER
ARDEN
CHAPMAN VILLAGE
MIDLAND
CLEVELAND HEIGHTS
WOODCREST
CHINESE HEIGHTS
EVERSTONE PARK
SCOOTER PARK
ARLINGTON
ROCKLAND
SO. KENDALL
ATLANTIC HEIGHTS
WOODDALE
DALMOUTH
MONASTICA
FRONTIER
EAGLEDALE

FIGURE 1

Oak Grove, Willimantic, Conn.
Phillipsburg, N. J.
Plainfield, Conn.
Plymouth Mine, Verona, Mich. (never developed).
Pratt City, Birmingham, Ala.
Proctor, Minn.
Roebling, N. J.
Rose Valley, Pa.
Seven Pines, Va.
Shawsheen Village, Andover, Mass.
Solano Irrigated Farms, Calif. (never developed).
South Manchester, Conn. (Cheney Mill Village).
Sunnyside, Long Island, N. Y.
University Park, Gainesville, Fla.
Waban Village, Newton, Mass.
Westerly Gardens, Bound Brook, N. J.
Westminster, Erie, Pa.
Williamsburg, Va. (Restoration).
Wilmerding, Pa.

Owing to the small number of cases appearing in the accompanying tables of Planning Factors and Existing Conditions, the communities have been arranged therein according to the main purpose for which they were founded, namely, Communities founded for Industrial Purposes, including separate and suburban communities founded by industrial agencies and those founded by governmental agencies where the purpose has been primarily for industrial employees; Communities founded for Residential Purposes, including those founded by real estate and philanthropic agencies, and by governmental agencies where the purpose has not been primarily for industrial employees.

## COMMUNITIES DEVELOPED BY INDUSTRIAL AGENCIES

### Separate Communities

#### Alcoa, Blount County, Tenn.

Founded in 1916 and developed by the Aluminum Co. of America and the Babcock Lumber & Land Co. Planned by E. S. Fickes and R. F. Ewald, engineers. V. J. Hultquist, city manager and superintendent of construction. Incorporation in 1919 under a commission-manager form of government. First unit of development completed in 1920. Population in 1920, 3,358; in 1930, 5,263; in 1936, approximately 5,600.

*Location.*—Alcoa is located about 15 miles south of Knoxville, Tenn., on the Maryville branch of the Louisville & Nashville Railroad and on the Knoxville & Augusta Railroad. Its location was determined primarily by the presence of potential hydroelectric power. In 1900 the company began the development of three hydroelectric plants on the Little Tennessee River and in 1912 purchased between 3,000 and 4,000 acres of land 13 miles from the power site and adjacent to Maryville as a town and plant site. The plants were built in 1914. While cheap power was the one primary factor in locating the plant, other factors which influenced the location were water and rail transportation, an available labor supply, good industrial clear water, and a favorable climate. The establishment of the city itself was primarily to provide adequate living conditions for a large number of employees at a point as close to the power supply as possible, but upon buildable land, which the area adjacent to the power sites did not afford, and in proximity to some established community which would act as a trading center. The presence of raw materials has not been a factor.

*The Plan.*—The plan of the town was based entirely upon economic considerations and took advantage of natural rolling topographical conditions in order to eliminate the necessity of heavy cuts and fills for streets and underground utilities. In general, the street system consists of three north-and-south, and four east-and-west main thoroughfares with secondary streets acting as diagonals which connect the several residential and industrial districts with one another. The local streets are straight and for the most part are laid out at right angles to the main thoroughfares and to the contour of the ground. Land lying along stream beds which could not be sewered was reserved for park areas acting as firebreaks and segregating the residential districts.

The plan of development was laid down in detail for an area of 5,000 acres, with an additional 2,500 acres planned in outline. Based on a density of 8 persons per gross acre, provision was made for 40,000 to 60,000 persons. This number, however, was never anticipated. It was intended to provide for future growth in any direction rather than to attempt to predict the direction of growth.

*Subsequent Development.*—Alcoa's subsequent development has followed closely the original plan laid down, with some adjustment of streets as was found advisable. The city lies about 7 miles south of the Metropolitan District of Knoxville as defined by the United States Census, 1930, and is on the State highway route from Knoxville to Chattanooga. Its city boundary on the south is coincident with that of Maryville, a town of about the same population as Alcoa. It is distinctly satellite to Knoxville, being dependent upon Knoxville and Maryville for about 90 percent of its retail trading. A number of the existing business structures in Alcoa are vacant at present. Alcoa is readily accessible to Knoxville by private auto, but inconvenient by bus, requiring a transfer through Maryville. Within the town itself, the disposition of the industrial area in the central portion of the city, while to some degree preventing unity in the plan,

places the three plant units within walking distance of the several residential districts. The plants, in turn, occupy large areas, much of which will remain in open space and will act as an effective buffer against too close proximity to the residential areas. The park areas, as already stated, tend to separate the town into segregated districts with approximately 1 acre of park area per 100 population within a half mile of any residence. One hundred and forty acres of park land have been set aside, 94 acres of which are developed or under development. Park areas not being utilized at present have been planted with trees, and open spaces are under cultivation as garden and farm plots.

Although the street plan represents an efficient adaptation to topography both as to street grades and underground utilities, it lacks a visual organization both on plan and on the ground of the relationship of the various sections of the plan and within the sections themselves. However, the disposition of the major and secondary streets provides direct access to the plant sites and between the residential districts. The town is essentially divided into two white and one colored village, each adjacent to one of the plants. In addition, the lumber company, since sold to other interests, maintained a village, which at present is in poor condition.

While no land has been set aside as a permanent green belt, the Aluminum Co. has protected its investment by taking title to sufficient land along most of the periphery of Alcoa to form an effective physical barrier to undesirable growth. Evidence of this is given by the absence of any sporadic development outside the planned area except at one point. It is unfortunate that a physical separation was not provided between Maryville and Alcoa, as the weakness at this point is evident in the inferior development which has taken place. Knoxville has recently acquired and is now developing an area of about 300 acres adjacent to the northern limits of Alcoa for its municipal airport, which will form permanent open space and may affect future development in this section.

*Housing.*—At the present time, all property sold into individual ownership by the company is covered by deed restrictions running with the title until January 1, 1945, covering land use, minimum cost of building, building lines, connection with public sewer and water supply, racial restriction, and the manufacture and sale of liquor. No provision is made for renewal, and no zoning ordinance has been enacted. However, at the present time the company owns 88 percent of all homes in the city, which still gives it virtual control of the land policy. The terms of sale used at the present time by the company provide for payment in 125 months, 0.8 of 1 percent of the principal each month, plus interest equalized for periods of 63 and 62 months respectively. Taxes and insurance are paid annually on the basis of actual accruals.

The houses are of one-story frame construction and, in general, offer better housing accommodations than are to be found elsewhere in the vicinity. Adequate light and air have been no problem as the average lot is 60 feet by 125 feet, giving an average distance between houses of 25 to 30 feet. The houses in private ownership are of a less expensive type than those built by the company, ranging between $500 and $3,500 in value, with $800 as the average. Company housing averages $2,500, ranging in value from $1,000 to $5,300. The houses and yards owned by the company are well maintained and offer a contrast to privately constructed dwellings.

*Appearance.*—Esthetically, the city of Alcoa has little to offer. However, a special emphasis has been placed on tree planting on streets and in park areas. The policy of planting street trees in the planting strips of future streets has been followed, which has given an appearance of early maturity to the development. A nursery is maintained by the company at which trees and shrubs may be purchased by the citizens at cost. The homes in general indicate that an interest is taken in gardening by the tenant.

*Community Facilities.*—Provisions for social activities have been well considered. The arrangement of the lineal park areas offers a maximum opportunity for use. Three schools, two white and one colored, are operated by the city and contain adequate playground areas and other facilities. The company has contributed toward the building of the churches. The city operates a 900,000-gallon swimming pool open to the public, which is intensively used and is included in the park system, as well as a nine-hole golf course which serves Alcoa, Maryville, and the vicinity. Undeveloped areas in and around the city are being utilized for carrying on a program of gardening. These areas have been divided into one-eighth-acre to one-acre plots and apportioned to the citizens at a nominal rental and are being taken advantage of by a large percentage of the company employees and others. In addition, truck gardening, school farming, and poultry raising are taught in the high school, where night classes in agriculture for adults are also carried on during the winter months.

*Government.*—The city government has been established on a sound business and financial basis. Municipal taxes are collected during the early part of each fiscal year, which enables the city to operate on a cash basis, except for financing major improvements as provided for by the issuance of bonds. During the depression years, these bonds remained above par. The present ratio of gross bonded indebtedness to assessed

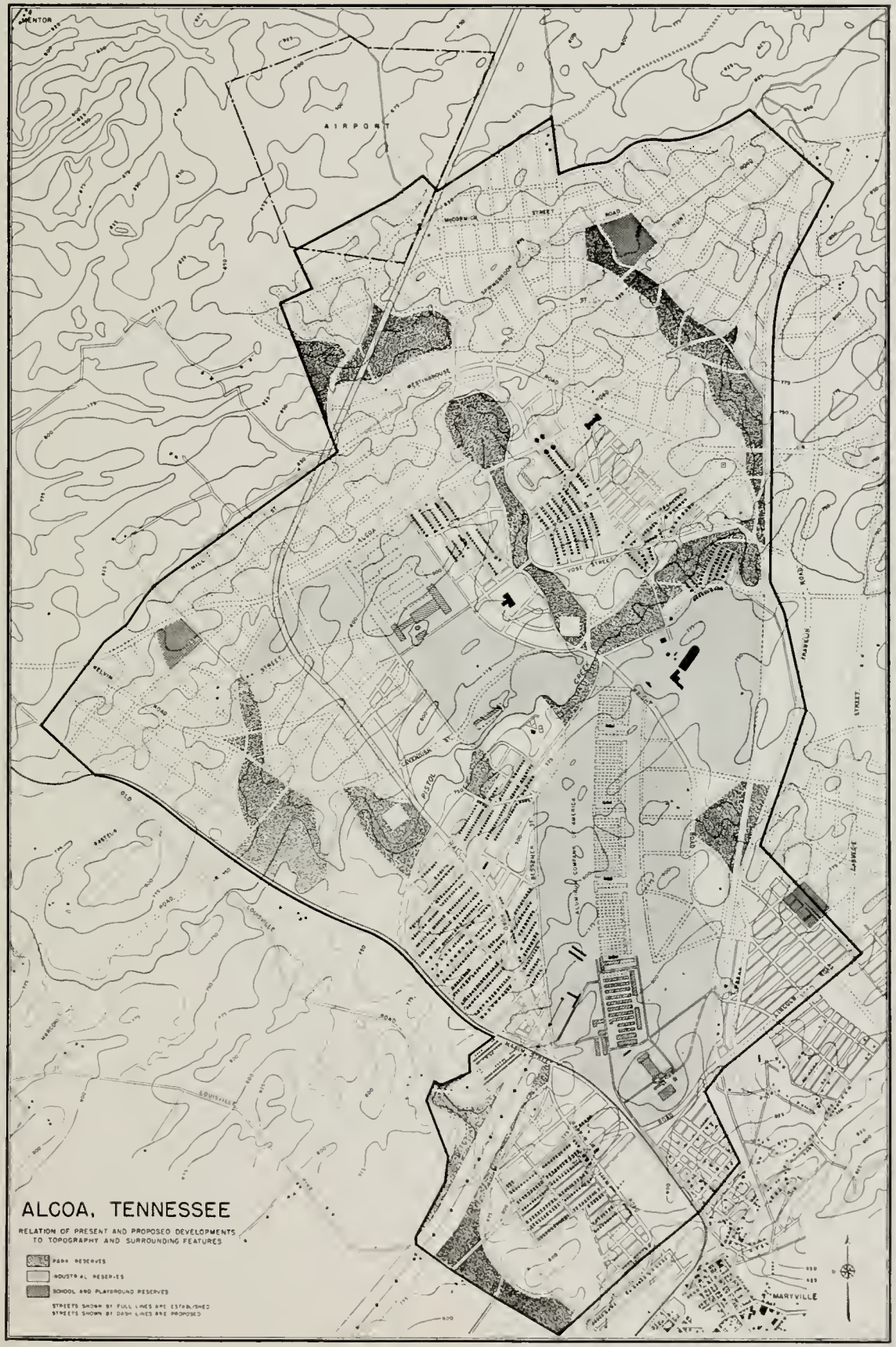



FIGURE 2.—Existing conditions

valuation is 8.6 percent and the net bonded indebtedness 5.1 percent, with no floating indebtedness. The allocation of operating expenses for the year ending September 30, 1935, were: Schools, 35.3 percent; interest on bonds, 17 percent; debt redemption, 14.6 percent; public works, 7.7 percent; public welfare, 8.3 percent; public safety, 9.3 percent; and general government, 7.8 percent. Actual budget expenditure was $111,434.88. Operation and debt service on schools accounted for 45.6 percent of the total. The excess revenue over expenses for the period 1919–35 was $15,387.84.

*Other Considerations.*—Although a one-industry city at present, the city is in a position to allow more and other industries to come in. The existing industry employs 3,394 persons, of whom 2,599 are unskilled, 481 skilled, 238 clerical, and 76 are in executive and professional capacities. This represents an increase of 57 percent over the average pay roll of the last 3-year period. The labor turn-over within the plant is estimated at 20 percent, counting all permanent and temporary separations from the pay roll due to fluctuating business conditions. It is the opinion of Mr. V. J. Hultquist, city manager of Alcoa, that in relation to the contentment of labor as far as general labor unrest is concerned, the facilities provided in Alcoa have had no significance. About one-third of the employees live in the city of Alcoa. The remainder are equally divided between homes in Maryville and rural homes. Land values have fluctuated very little, as employment has remained relatively stable. Land use, due to adherence to the city plan, has also remained stable.

The objective of the company in founding Alcoa was "to provide unusually good urban conditions which would attract and hold an exceptionally good grade of employees, with the elimination of the usual waste in planning, building, and operating a municipality with the consequent high taxation and resulting discontent." The company's attitude is that its function is to bridge the gap between the period when the necessity for a town occurs and the period when local interests are able to assume the responsibility, and the population and labor supply become adequate to allow local interests to provide the necessary facilities for the community. It should be recognized, however, that the city as it exists today is the result of both direct and indirect subsidy on the part of the company and that the facilities now provided could not have been obtained otherwise.

**Chicopee, Hall County, Ga.**

Established and developed in 1927 by the Chicopee Manufacturing Co., subsidiary of the Johnson & Johnson Co. Population in 1936, 1,025. Town planner, Earle S. Draper. Architect and engineer, J. E. Sirrine.

Chicopee was established as a model community for the manufacture of surgical and sanitary dressings to supplement the production of the Johnson & Johnson plant at Chicopee Falls, Mass. A location 4 miles from Gainesville, Ga., a city of about 8,000 inhabitants, was selected as a favorable site. The primary factors which determined this location were:

1. A southern location was sought because it offered cheaper power, low land cost, lower taxes, and lower labor costs.
2. The site selected afforded rail facilities on the main line of the Southern Railway.
3. An adequate native labor supply was available.
4. An industrial clear-water supply was obtainable.
5. The location offered good climatic conditions and a high altitude.
6. A clean atmosphere was especially desirable, due to the nature of the manufactured product.

It is interesting to note that, although located in the cotton belt, the accessibility of raw cotton has not been mentioned as a primary factor in location. However, the company has established cotton farms where experiments are being conducted in an effort to produce a better and more stable product in the surrounding region.

*The Plan.*—The plan forms a well-organized unit about a town center. The main highway from Washington, D. C., through Gainesville to Atlanta passes the town center, separating the industrial area from the residential district. Radials leading from the center connects all parts of the residential area with the center, affording direct access to the plant. About 12 percent of the planned area, not including the open space in the town center and about the plant, was allotted to park and recreation. Lots were planned 65 feet wide by 130 feet deep, permitting wide side yards and, consequently, a lower insurance rate. Approximately 500 residential lots and 10 business lots were planned, providing for a population of about 2,000 persons.

*Subsequent Development.*—Chicopee is the best, although not the largest, of the mill villages visited in the South. Its present development has closely followed the original plan. The street system has been effectively fitted to the gently rolling topography which slopes toward the main highway and railroad. Although the town is only about half completed according to plan, this development has been systematically extended, the only incompleted portion of the built-up area being the schoolhouse and the town center, which awaits the future erection of two churches and the community building. These areas are maintained in open, well-kept lawns at present. The undeveloped residential section as well as other areas have been allotted to employees for garden plots and are inten-

sively used. About 4,000 acres of land owned and farmed by the company completely protect the town from undesirable growth at its periphery, with the exception of the northwest boundary. The value of this buffer is demonstrated by the poor development which has taken place where it is lacking, at the point immediately adjacent to the railroad right-of-way and continuing sporadically to Gainesville. The railroad cut acts as an effective barrier against access to the town except at the highway approach, but fails to form a visual buffer. Portions of the 4,000 acres not adapted to cultivation are being reforested with pine seedlings at the present time.

The separation of through traffic on the highway from local traffic in and around the town center has been effectively accomplished by the use of access roads sep-

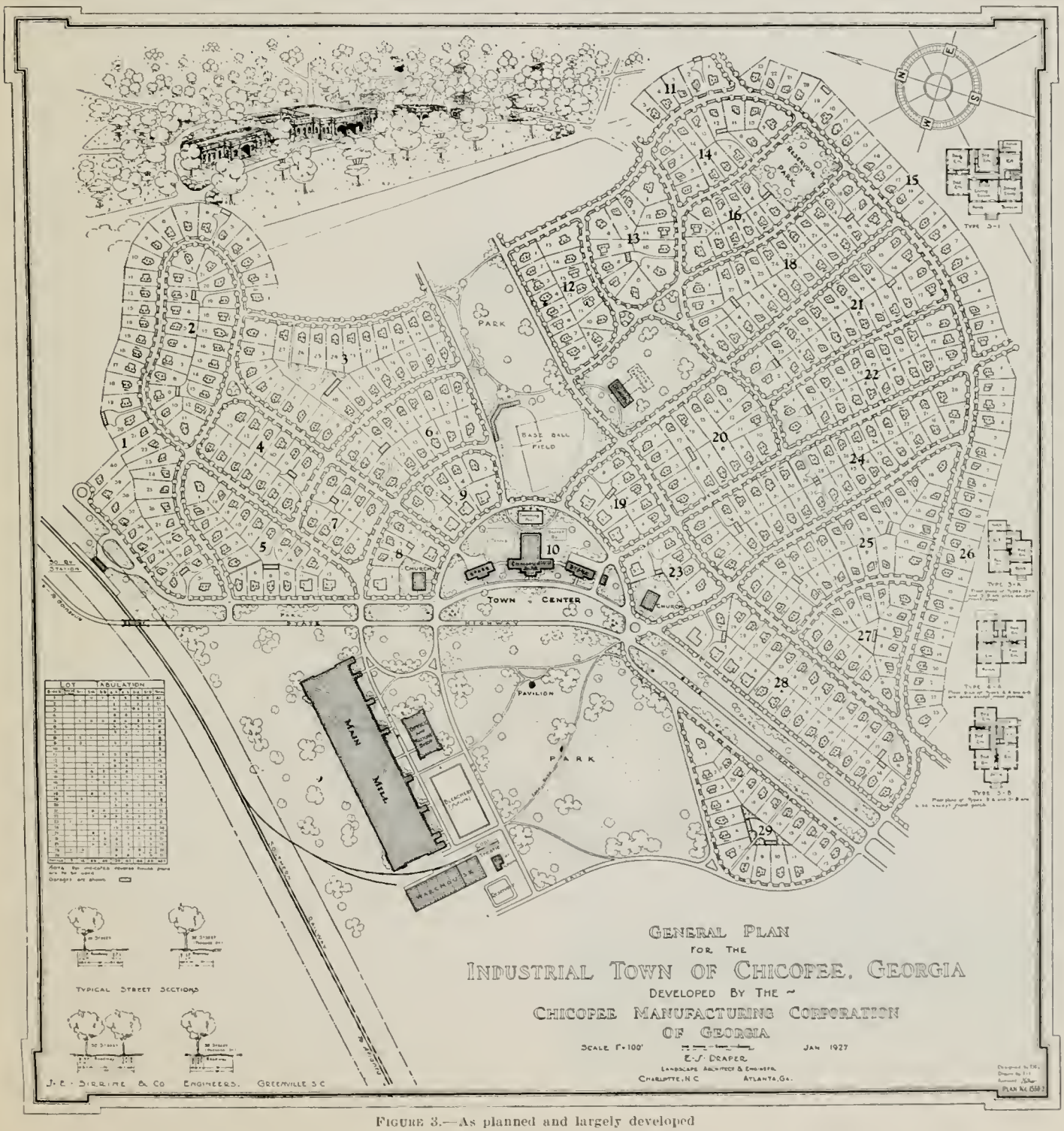



Figure 3.—As planned and largely developed

arated from the main highway by a wide park strip. Hard-surface roads and sidewalks have been completely laid throughout the developed area. The park area adjacent to the factory forms a relatively high knoll which effectively screens part of the town from the plant and affords a view over the surrounding country. As yet, it has not been intensively developed.

*Housing.*—Chicopee provides excellent housing facilities. Two hundred and seventeen dwellings have been erected. All are one-story, single-family cottages, typical of the South. No basements are provided except in six of the larger houses. Construction is brick veneer, brick foundations, and asbestos shingle roofs. There are 124 four-room houses, 65 five-room, 20 three-room, 4 six-room, and 4 seven-room houses. All houses are equipped with baths, community water, and sewerage connections. Each house has a large front and rear porch. Electric wiring is entirely underground. The large lot areas and the comparatively small dwelling units result in 40- to 50-foot side yards, and a 40-foot setback has been maintained in most instances, which gives the development a feeling of spaciousness. Lawns and base plantings are well maintained by each tenant. The large open rear yards in the interior of the blocks are not used at present, but are maintained by the company. It was intended at one time to allow gardening in this area, but the company has felt that it was more desirable to allocate gardens elsewhere for those who desired them and to avoid the possibility of an uneven and spotty appearance in the block interiors. Group garages are provided at various points in the interior of the blocks, with direct access to the street.

*Community Facilities.*—Community activities have been well organized. The present size and youth of the town, however, have made it difficult to provide all of the facilities with permanent structures. The grade school operated by the company is at present located in one of the company buildings adjacent to the plant and necessitates children crossing the highway to and from the village. A new high school halfway between Chicopee and Gainesville, and serving both communities, has recently been opened. While there is hardly an adequate population to support one church, it is necessary to provide two churches to satisfy two fairly equally divided denominations. Provision for these churches has been made on the plan. A model medical and dental clinic is maintained by the company near the town center. Nonresident doctors and dentists furnish services at a nominal charge, half of which is borne by the company. Free prenatal, maternity, and child care is given to all families.

FIGURE 4.—Typical street, Chicopee, Ga.

The town has been passing through a transition period, during which the native and highly individualistic Georgia hill population had to adapt itself to new ways of life and develop an appreciation for the facilities which were being provided. This transition has apparently been accomplished successfully, as evidenced by a greatly decreased labor turn-over and by the various community organizations which have been encouraged without pressure by the company, including Chicopee baseball and basketball clubs, a garden club, and a men's booster club with its own clubhouse, in addition to the usual community-house activities. The population is largely made up of a young age group which has tended to organize itself. A community store, including drugs, groceries, meats, and general merchandise, and a gasoline station are operated by the company at prices prevailing in Gainesville. However, about 50 percent of the retail trading is done in Gainesville.

*Appearance.*—Even in its immature state, Chicopee has a charm which is the result of good planning and landscape treatment. The houses are not architecturally beautiful but enough variation has been introduced into their exterior lines to add interest; and this, together with the plantings, which are still small, the well-alined streets and the large areas of well-maintained lawn give a charm and character to the town which should increase with maturity. In addition, daily garbage and refuse removal is maintained, which adds to the general sightliness of the community, and the complete absence of overhead wires, billboards, and store signs offers a striking contrast with the sporadic development across the railroad right-of-way.

*Control.*—Chicopee is completely owned and operated by the corporation, which maintains a municipal organization. The town is covered by the following general regulations.

1. Keep sidewalks swept.
2. Help to keep all streets, parks, and playgrounds clean. Do not scatter papers or other rubbish on any part of the property.
3. Never park an automobile in front of a fire hydrant.
4. Do not tamper with fire hydrants or the village telephones.

5. Do not damage trees, shrubs, roadways, or any other public property.
6. Cows, mules, horses, and goats must not be kept upon the property and household pets must not include a vicious dog or any other animal which can menace or annoy your neighbors.
7. Know where your children are and what they are doing when not in school or in charge of a director at the playgrounds.
8. Use village telephones to report instantly an outbreak of fire.
9. Report immediately to the trained nurse in every case of sickness.
10. Report all public nuisances, disturbances, and violations of the law to the Department of Public Safety.
11. Use village telephone to report accidents.

A volunteer fire department has been organized among residents of the community.

*General Consideration.*—Chicopee is, of course, a one-industry company town. The nature of its product requires a good type of labor, and the appearance of the employees, both men and women, indicate that this type of labor has been obtained. Of 530 persons on the pay roll during May of this year, 75 percent live in the community. Four hundred and ninety-five or 93.4 percent are classed as unskilled labor, 30 or 5.75 percent as skilled labor, and 5 or 0.9 percent as clerical workers.

The theory upon which the town was established was that in providing living facilities which were superior to those to be found elsewhere, the best available and most stable labor supply could be obtained.

**Fairfield, Jefferson County, Ala.**

Established in 1910 for the employees of the new Tennessee Coal, Iron & Railroad Co., subsidiary of the United States Steel Corporation. Developers, Jemison Real Estate & Insurance Co., of Birmingham, and the Fairfield Land Co. Town planner, George H. Miller. Engineer, R. E. Meade. Incorporated, 1918. Population in 1914, 1,200; in 1920, 5,003; in 1930, 11,059; in 1936, little change.

*Location.*—Fairfield is located in the geographical center of rich deposits of coal, iron, and limestone (dolomite), which encircle an area with a radius of some 12 miles. The center of Birmingham lies about 6 miles to the northeast, Bessemer 6½ miles to the south, and Ensley, now within the limits of Greater Birmingham, 1 mile to the north. The industrial area comprises over 2,000 acres of level land lying adjacent to the combined rights-of-way of the Birmingham Southern, the Southern, Louisville & Nashville, and the St. Louis-San Francisco railroads. The original town site, lying to the east of the industrial area, was known as the Cory tract, as the town was then called, and included in the proposed residential and business area between 350 and 400 acres. Cory was planned originally as a company town, the early development being carried on by the Jemison Real Estate Co. Development was subsequently taken over by a newly formed subsidiary of the Tennessee Coal & Iron Co., which acquired the minority interest of the Jemison Co. under the name of the Fairfield Land Co. Property was then sold to employees of the company, and the Jemison Co. erected typical houses on various blocks in order to establish the pattern and character of the town.

*The Plan.*—The original plan of Cory was apparently influenced to a considerable extent by the original land survey, which had placed rigid 40-acre coordinates on the area, and by the main approach from Birmingham, whose city limits are now contiguous with Fairfield on the north and east. The plan was centered about an open area of 18 acres which incorporated a wooded park, recreation field, plaza, and civic center, the latter to include a town hall, library, Y. M. C. A., public baths, and school. Adjacent business buildings were designed to harmonize with the civic-center scheme. An entrance parkway, forming the main approach from Birmingham, divided at a knoll into the main business street on one hand and the approach to the civic center on the other, forming the two major thoroughfares of the city. A parkway connection partially skirted the civic group and central residential area, as was dictated to a certain extent by topographical conditions. The remainder of the tract was laid out in short gridiron blocks. Nine hundred and twenty-six residential lots and 330 business lots were planned for an estimated population of between 4,500 and 5,000.

In general, the plan is uneconomical as to the area devoted to streets. This is due to the use of exceedingly short blocks, the disposition of the business district, the occurrence of double frontage lots and excess street front in certain sections, and the wide rights-of-way devoted to parkway. The latter provision, however, has been fully justified in the opinion of city officials, and offers visual evidence of its value.

*Subsequent Development.*—The present population of Fairfield has greatly outgrown the original Cory tract. The present city, however, consists essentially of two segregated communities of almost equal size and population, the original tract being devoted largely to higher-paid employees as originally planned. The additions to the south contain the colored population, comprising the lower income group. These additions were largely carried out by outside speculative interests with no regard for the original plan either in relation to the street system, the character of the development, or the objectives of the founders. As no provision was made for protecting the periphery of the Cory tract or for controlling extensions, this develop-

ment is contiguous and inferior to the greater part of the original town. This development was probably inevitable, as the original development was of a character to attract the relatively higher income groups, leaving the lower paid workers to find homes in Birmingham and Ensley or in districts developed for the purpose. This fact, however, does not lessen the responsibility of subsequent developers in failing to coordinate with the existing community. The large areas devoted to the Tennessee Coal & Iron Co. hospital, the school grounds, and a vacant area desired for park purposes have formed a partial protection along the eastern border of the original tract.

Several marked defects in the original scheme present themselves and are substantiated on the ground after a period of 26 years. The area designated for business was confined, except for two blocks on Crawford Street, to Gary Avenue and its extension on Valley Road, forming a business area about three-quarters of a mile in length. Three hundred and thirty business lots were laid out, averaging 25 feet of frontage, or a total of about 8,250 feet of business frontage. Based on the population originally planned for of approximately 5,000, 1.6 feet of business frontage per capita was provided, which is three times that found to be needed for a wholly self-contained community and four to six times that needed for a satellite, such as Fairfield. Based on total area, assuming that the average norm of 5 percent is devoted to business, this would give about 12.6 acres needed as against about 19 acres actually provided. As a matter of fact, out of 418 units now zoned for business within the corporate limits and totaling 10,450 feet of frontage, only 200 business units have been built to supply twice the population planned for. Many of these are temporary structures devoted to automobile service, and a number are vacant. It is evident that approximately twice as much business frontage exists today as is needed for the present population. Its proximity to Birmingham as a shopping center and the fact that Fairfield is almost completely built up within its city limits and can only expand to the south, beyond the colored district, makes any future use of this area for business a remote possibility.

About half of the 330 business lots along Crawford Street, Gary Avenue, and Valley Road are vacant. Those built upon are scattered over the entire length of the business district, leaving vacant lots between,

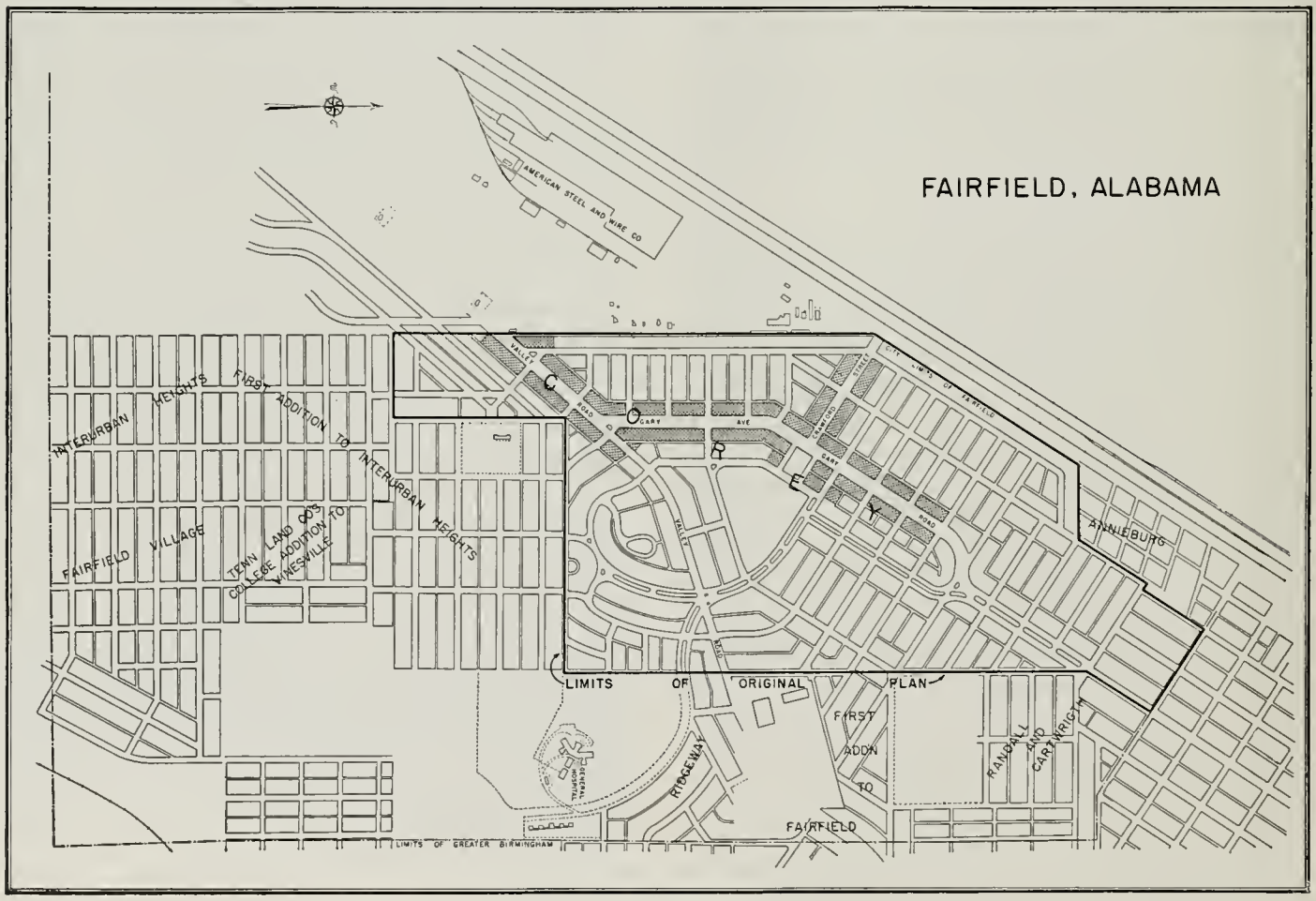



FIGURE 5.—Existing conditions

which are still being held for business use. The business area thus scattered along a single street is inconvenient as a shopping district, uneconomical as to the surface and underground facilities needed for each active business unit, and extends its influence in the form of depressed values to a larger residential area adjacent to it. Crawford Street, originally intended as the main approach to the plants and an active business street, has developed into second-class business, the main entrance to the plants being located some distance to the south.

The fact that no main highways enter or leave Fairfield eliminates through traffic. City officials feel that the disposition of the two major thoroughfares has facilitated the movement of local traffic within the city. The disposition of the business area in relation to the adjacent industrial tracts has created a series of short residential blocks between the two, which are depreciated on one side by the backs of the stores and on the other by the steel plant, and which, having but little of their area left not so affected, are obviously undesirable as residences and form the only decadent area within the limits of the original plan.

*Housing.*—The original houses built in Fairfield were one-story bungalow types of five or six rooms. Subsequent development followed much the same character. Two-story houses of higher cost are confined largely to the parkways, which, according to Mayor C. N. Gilley, have been important factors in stabilizing the relatively high character of residential development, and have fully justified their construction and maintenance in the resulting enhanced values. A relatively high percentage of houses are equipped with basements and furnaces. Although many of the houses are three rooms deep, the provision of 50- by 125-foot lots throughout the town provides adequate side yards for one-story housing, averaging 20 feet between house walls. An average setback of 20 feet from the street line has been observed. Construction has been entirely of wood. The definite influence of the parkways, the central park area, and the distance from the business and industrial districts is reflected in better maintenance and appearance of yards and dwellings in the areas which feel this influence, although the housing is of much the same type as that which was originally built elsewhere with less success in establishing the subsequent character of the development.

*Community Facilities.*—Except for the business buildings facing the plaza, the civic center originally planned in the central area has never been realized. This area, aside from the school grounds which now lie outside the original plan, forms the only public park area in the city and is used intensively for athletics, play, and passive recreation. The city is attempting to acquire at present the only available vacant area within the city limits for an additional park. The social life of the community largely centers around church and school activities. Separate schools are maintained for white and for colored students. A council of clubs, made up of a number of men's and women's business and social organizations, takes an active interest in civic affairs. The Tennessee Coal & Iron Co. hospital occupies a hill site of about 35 acres which overlooks the entire valley. The facilities provided make it one of the best institutions of its kind in the South.

*Appearance.*—As already mentioned, the area surrounded by the business and industrial districts presents a decadent appearance, which is relieved to some extent by a consistent planting of street trees. The scattered business district is only improved by the fact that the city maintains the vacant lots at its own expense, as well as any vacant lots within the residential districts. The north and east sections of the city, however, present a well-kept appearance which is heightened by the maturity of the street and yard plantings. The municipal government fosters the beautification of homes and maintains a nursery to supply material for streets and parkways, which are well maintained and were in good condition when visited, despite an extended period of drought. Plant material from this nursery is also available to citizens, free of charge. This interest which has been taken by the municipal government has thus preserved one of the best features of the original plan as well as improved the appearance of otherwise unsightly va-

FAIRFIELD, ALA.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | NUMBER OF LOTS |
| RESIDENTIAL | 140.1 | 55.2 | RESIDENTIAL - 926 |
| BUSINESS | 19.0 | 7.5 | BUSINESS - 330 |
| TOTAL | 159.1 | 62.7 | TOTAL 1256 |
| PUBLIC AREAS | | | |
| SCHOOL SITE | 2.1 | .8 | |
| PARK & PLG. | 9.2 | 3.6 | |
| TOTAL | 11.3 | 4.4 | |
| STREETS | | | STREET LENGTH |
| 140 FT. WIDE | 3.5 | 1.4 | .2 MILES OF 140 FT. STS |
| 100 " " | 19.5 | 7.7 | 1.6 - - 100 " " |
| 80 " " | 1.8 | .7 | .2 - " 80 " " |
| 60 " " | 4.2 | 1.7 | .6 - - 60 " " |
| 50 " " | 43.0 | 17.0 | 7.1 - - 50 - " |
| ALLEYS-15 FT. | 11.1 | 4.4 | 6.1 - - ALLEYS |
| TOTAL | 83.1 | 32.9 | 15.8 - TOTAL |
| GRAND TOTAL | 253.5 | 100.0 | |

AREAS AND DIMENSIONS OBTAINED BY SCALING MAP.
SCALE OF MAP: 1" = 200'

Table 1.

cant business lots. The city also maintains a daily scavenger service, Sundays excepted, to all homes within the city limits.

*Government.*—Fairfield was incorporated in 1918. It operates under a mayor and a council of 11 members, elected for terms of 4 years. There is an official city planning board, consisting of 6 ex officio members, serving for 2-year terms. Private restrictions governing the use of property and minimum cost of dwellings were incorporated into deeds of sale in accordance with the land-use scheme of the original plan. At the expiration of the private restrictions in 1925, a municipal zoning ordinance covering use was enacted, which is also in accordance with the original scheme and is strictly enforced. The hope was expressed by officials that it would be possible in the near future to rezone a portion of the outlying business district for residence in an attempt to reduce unrealizable values and encourage development of these areas along sound lines. The corporate limits now include 860 acres. The industrial areas lie entirely outside of the corporate area. With the incorporation of the city, the company withdrew entirely and has exerted no influence over the affairs of the city since that date.

*General Considerations.*—Fairfield houses about 60 percent of the employees of the Tennessee Coal & Iron Co. About 5 percent of the wage earners living in the city work in Birmingham. Of the white wage earners, who comprise only 41 percent of the population, 8 percent are unskilled, 90 percent are skilled, and 2 percent are clerical. Executive and professional groups include only about 25 families. The colored inhabitants, making up the majority of the population, are confined to the additions south of the original Cory tract in a much inferior development but in some respects a better site at a considerably higher elevation. Unskilled colored workers in the plants comprise 80 percent and skilled workers 20 percent of the wage earners in this group. The remaining 40 percent of the employees live in Ensley, Birmingham, and the surrounding area.

Transit facilities from Birmingham consist of a single street railway, requiring 40 minutes' commuting time to the Birmingham business district.

The fire loss, although not entirely comparable with that of Birmingham, is of interest, being 62½ cents per capita over a 3-year period for Fairfield against $3.50 per capita over an overlapping 5-year period for Birmingham.

Statistics indicate that the highest number on the relief rolls in Fairfield during the depression was 6 percent of the population as against 30 percent for Jefferson County at large.

In general, it may be said that, in spite of the defects which were inherent in the original plan and the subsequent development, Fairfield represents a successful attempt at providing a community for a specific purpose. The fact that the Tennessee Coal & Iron Co. has had a labor turn-over not exceeding seven-tenths of 1 percent over the last 6-year period is an indication of this success. In addition, the community has functioned largely without subsidy, and much of the enhanced land values created by the establishment of the city were realized by outside interests.

**Hopedale, Worcester County, Mass.**

Established in 1841 by the Rev. Adin Ballou as a Christian Socialist community. Town taken over in 1856 and extended by Messrs. Draper to house workers in the cotton machinery plant. Incorporated. Population in 1930, 2,973; in 1935, 3,068. Arthur A. Shurcliff, town planner of later development.

*Location.*—Hopedale is located on Massachusetts State Highway Route 126, 2 miles from the center of Milford and about equidistant from Boston, Worcester, and Providence, R. I. The present Draper Corporation was formed by the consolidation of several small local companies around 1856. Hopedale offered a good water-power site for factory operation. The tendency of employees to commute led the company to extend the village in order that workmen could live near the plant.

*The Plan.*—The town consists essentially of two sections; the south or original part founded in 1841, and the north or later development of the Draper Corporation separated from the former by the mill, business buildings, and community building and grounds. In addition, an Italian village is located some distance from the main community. The older section is of less interest here than the later development of the company. The newer development borders the mill pond and playfield, and consists largely of straight streets along the contour with minor streets adjusted to relatively steep topographical conditions in certain areas. One of the most interesting parts of the town, laid out around 1915, is on a promontory jutting into the mill pond and is a well-designed house group facing the pond and served in the rear by a turn-around.

*Subsequent Development*—Writing of Hopedale in 1905, Budgett Meakin in his book *Model Factories and Villages* states that it was the best of the model villages in America.

> Nearly all (houses) have water, gas, electric light, baths and good drainage, and those who will may purchase, though few do so, as the population is not stable * * * Hopedale is especially fortunate * * * in possessing some 150 acres of park, including 6 acres of playground, and a very pretty broken piece of water running its whole length * * *. In the newer portion of the village, Bancroft Park, the roads are curved, to avoid the wearying sameness of the interminable American streets, and all are planted with trees.
>
> A peculiarly fine effect is produced in Hopedale, as in all high-class American villages, by the absence of front palings, or walls

and gates, so that on both sides the roads are bordered by lawns down to the "side-walk" and the whole presents a spacious park-like appearance.

Rents at that time ranged from $1.44 to $4.80 per week, "the interest earned on capital so invested varying from 2 percent to 4 percent. The better class modern houses, finished in unstained 'shingle' * * * are of specially tasteful design, letting at 12s. a week (or 14s. if fitted with heating furnaces), rates and insurance included." This corresponds to $2.88 and $3.36 according to the value of the pound in 1903. "This on an average cost of 900 (pounds) each (approximately $4,350), yields a bare 3 percent, and the return is lower than would induce a private individual to put them up."

Hopedale today has apparently changed little since 1903, except in size and maturity. The homes which were new in 1903 are now renting for from $2 to $5 per week with a few at $7, the average being about $3.75. The utilities provided at that time have been extended, and although the houses are no longer new, they are well maintained by the company and fulfill all the modern standards of light, air, and sanitation. Certain changes are worth noting, however. The advent of the automobile introduced the necessity of garage accommodations. This has been handled in a very satisfactory manner by locating garage groups in areas screened and segregated from residences, yet within less than a block of any house. This provision has, however, created another problem. In parts of the community, local roadway widths have been held at 18 feet. There has been a tendency for car owners, instead of parking at the garage, to park in front of the house during the day or evening, thus destroying the efficacy of the street. The group garage has, however, prevented the intrusion of garages on lots not designed for them.

The mill pond still supplies a minor part of the power used in the plant. The pond, however, has been converted into a recreation area and a bathhouse provided, which forms an effective focal point for outdoor activities.

The present maturity of the street trees and house plantings in most of the town makes an interesting contrast with photographs taken in 1903.

The company owns most of the land within the corporate limits of the town and thus controls all development which takes place. The periphery of the urban area is heavily wooded and rather rugged, forming a most effective greenbelt surrounding the entire town except on the south.

Hopedale provides a very limited amount of business, privately run and confined to three stores—drug, shoe, and general—at the town center. In addition, two grocery-store conversions have taken place on private property, one being vacant and neither particularly objectionable. They are, however, poorly located for business use.

*Housing.*—The housing aspects have been discussed above in connection with subsequent development. Several other factors are of interest, however. The fire hazard which is always present in the type of construction used at Hopedale has been considerably lowered by reroofing all of the houses with composition shingles. The house sites are not divided into lots. However, each house unit occupies a site with approximately a 50-foot front, the depth varying from shallow to deep, according to the topographical conditions, which in some sections are rather abrupt. As the majority of dwellings are semidetached, a side yard between house walls of 30 feet or more is provided. Set-backs from the street average about 25 feet. The yards, both front and rear, are almost without exception excellently maintained. The houses, however, have not been quite as well preserved during the past few years as previously, although the maintenance is good. It is apparent that within a short time the shingle side walls will require replacement in some sections, which, if done in different materials, may affect the very pleasing harmony and character of the community at present.

The automobile has made the boarding house an almost unnecessary adjunct in the company town. The boarding house at Hopedale has just been converted into an excellent apartment house, with the idea of attracting some of the smaller families now living in the larger houses. It provides for 24 families with units of 4 rooms each. There is at present a waiting list of about 200 families desiring houses at Hopedale. The company owns at present 750 dwelling units.

*Appearance.*—Hopedale has a charm and beauty which were found in only a few of the other communities visited, such as Forest Hills Gardens, Indian Hill, and Chicopee. This is partly due to its maturity and fully as much to the careful maintenance of the town, its open spaces, and the harmony of most of the housing, which is not beautiful individually but, taken together, presents a highly successful effect, in no way to be associated with the appearance of the ordinary mill village. Several defects detract from this effect, however. Telephone poles and wires have been allowed on some of the streets. The business buildings in no way add to the charm of the adjacent library or new community building, and the garage groups, although hidden from view, could be decidedly improved in appearance and maintenance more in character with the rest of the community. In general, however, Hopedale has maintained the excellent character and individuality which gave it the reputation of a model industrial town.

*Community Facilities.*—Year-round community activities are well supplied. In addition to those provided by the playfield and mill pond, the comparatively new and excellent Community House offers its facilities to adults of the community at 50 cents a year and to children at 25 cents. The community has the facilities of two churches and a library housed in its own building. No commercial amusements are located in the town. The small provision of local business has made it necessary for the town to depend largely upon Milford and Worcester.

It was stated that the group garage has been a social factor in getting people acquainted. Allotment gardens of about 3,000 square feet are supplied to all employees who want them. Plowing is paid for by the individual to the company. Quotas for gardens have been filled each year.

*Government.*—Although municipally incorporated, the town of Hopedale is entirely controlled by the Draper Corporation, the town government being essentially a department of the company. The town, as it is known in New England, was formed by taking from Milford a narrow rectangular area about 4½ miles long and 1 mile wide. In this way, the company avoids the element of municipal taxation over which it has no control. The local tax rate for the last 3 years has been between $29 and $30 per 1,000. In 1935, taxes on the entire town amounted to about $90,000. The government, as in other Massachusetts towns, is run directly by three selectmen.

*General Considerations.*—About 66 percent of the employees of the plant live in Hopedale. About 10 percent of the wage earners in the town work elsewhere. The employees living in the town represent the higher income groups of the plant. Wage rates in the plant in the low and medium income groups range from approximately $16 to $25 per week. A small plant known as Westcoots spindle blade factory is also located in Hopedale and employs a relatively small number of persons. It was the opinion of various employees interviewed that the majority of persons living in the town were well satisfied and that most of them had been with the company for many years, an evidence of low turn-over both in the town and at the plant.

**Kapuskasing, Ontario, Canada**

Designed for the Spruce Falls Pulp & Paper Co. by the Bureau of Municipal Affairs, Province of Ontario, about 1920. Incorporated 1921. Population in 1936, 3,350. Town planners, Harries & Hall, A. M. Kruse, associate. Architect, James Govan. Consulting engineer, C. E. Dallyn. Under direction of J. A. Ellis, Director of Bureau of Municipal Affairs.

The establishment of new towns in Canada is of considerable interest in the field of planned communities, as in many cases they show the cooperation which has taken place between the Government and private industry. Kapuskasing is such a case, and for that reason consideration has been given to this relationship as well as to a discussion of the town itself. In the Bureau's *Report re Housing for 1921*, Mr. Ellis says:

> Kapuskasing is located on the Canadian National Transcontinental Railway and the River Kapuskasing, 70 miles west of Cochrane.
>
> This town was incorporated by chapter 36 of the Statutes of Ontario, 1921. This act authorized the government of Ontario to enter into an agreement with the Spruce Falls Co., Ltd., for the planning, laying out, and establishment of a town site. The company is engaged in extensive operations concerning the manufacture of pulpwood and has erected mills and other works for that purpose at Kapuskasing.
>
> The planning and laying out of the town site and all other work connected therewith has been done entirely by various officials of the Ontario Government. * * *
>
> The entire town site as subdivided is owned by the Province which also owns a large portion of the other land included in the limits of the municipality.

The principal reasons for the Government's action in this matter were to prevent the town becoming a "closed" or "company" town, the consideration that the town could not always depend upon the lumber industry, and the policy of the Dominion Government to encourage the development of agriculture as well as lumbering, thus promoting the balanced development of the entire section.

*Location.*—The general location of Kapuskasing was determined primarily by the accessibility of raw material for paper manufacture, the presence of rail facilities, and the availability of clear water and a hydroelectric power supply. Mr. Ellis says of the site location:

> Preliminary visits were made to the location by all the interested officials of the Government and the general conditions carefully studied. A topographic plan was prepared by the Surveyor-General's Department, and on this (were) located all the buildings which were in any way prominent, as well as the levels.
>
> The company has acquired rights to develop two power plants on the Kapuskasing River. When this has been done the level of the river will be considerably raised, and a quantity of land will be flooded. It was therefore necessary to obtain reliable data as to the effect of the raising of the river. It was then found that practically the only available town site was the one which has been selected. The elevation of this town site is sufficient for all requirements, and it has the peculiar advantage that when the level of the river has been raised it will be almost entirely surrounded by water. This having all been cleared and stumped should prove a valuable safeguard in case of fire.
>
> *Subdivision Plan of Town Site.*—It was found that no secure circulation through the town a new high-level bridge across the river at a different location that the two small existing ones was necessitated. The company in their original agreement had agreed to raise, at considerable expense, the present bridges and replace by means of a large fill the Government highway, which would be required as the result of the raising of the river. As the proposed new bridge was found to require only a slightly increased cost, the company

undertook, in lieu of the former obligation, to undertake that of supplying the required new bridge.

The location of this bridge determined, to a considerable extent, the plan of subdivision to be followed.

It will be noted that the success of the plan depended largely upon the provision of the bridge. It is interesting to compare the original plan with that existing at present. The bridge construction was included as part of the contract for the town. A change of government permitted the omission of the bridge and the moving of the railroad station. Thus, the entire plan was thrown out of balance, as discussed in section 3. Again is emphasized the need for a continuing policy in planning and subsequent development.

*The Plan.*—Mr. Ellis says of the plan:

By section 2 of The Planning and Development Act an "urban zone" in the case of a town includes the area within 3 miles of such town, and under section 4 of the act the municipality can vary such urban zone on preparing a plan of such variation and obtaining the approval of the Ontario Railway and Municipal Board.

Under section 5 of the act "The council of a city, town, or village may procure to be made for adoption by it a general plan of such city, town or village and the urban zone adjoining it, or of such portion of the same as such council may deem expedient." Such general plan, which also shows the variation of the urban zone, has been prepared, * * * and the necessary steps are being taken to have it approved by the Ontario Railway and Municipal Board.

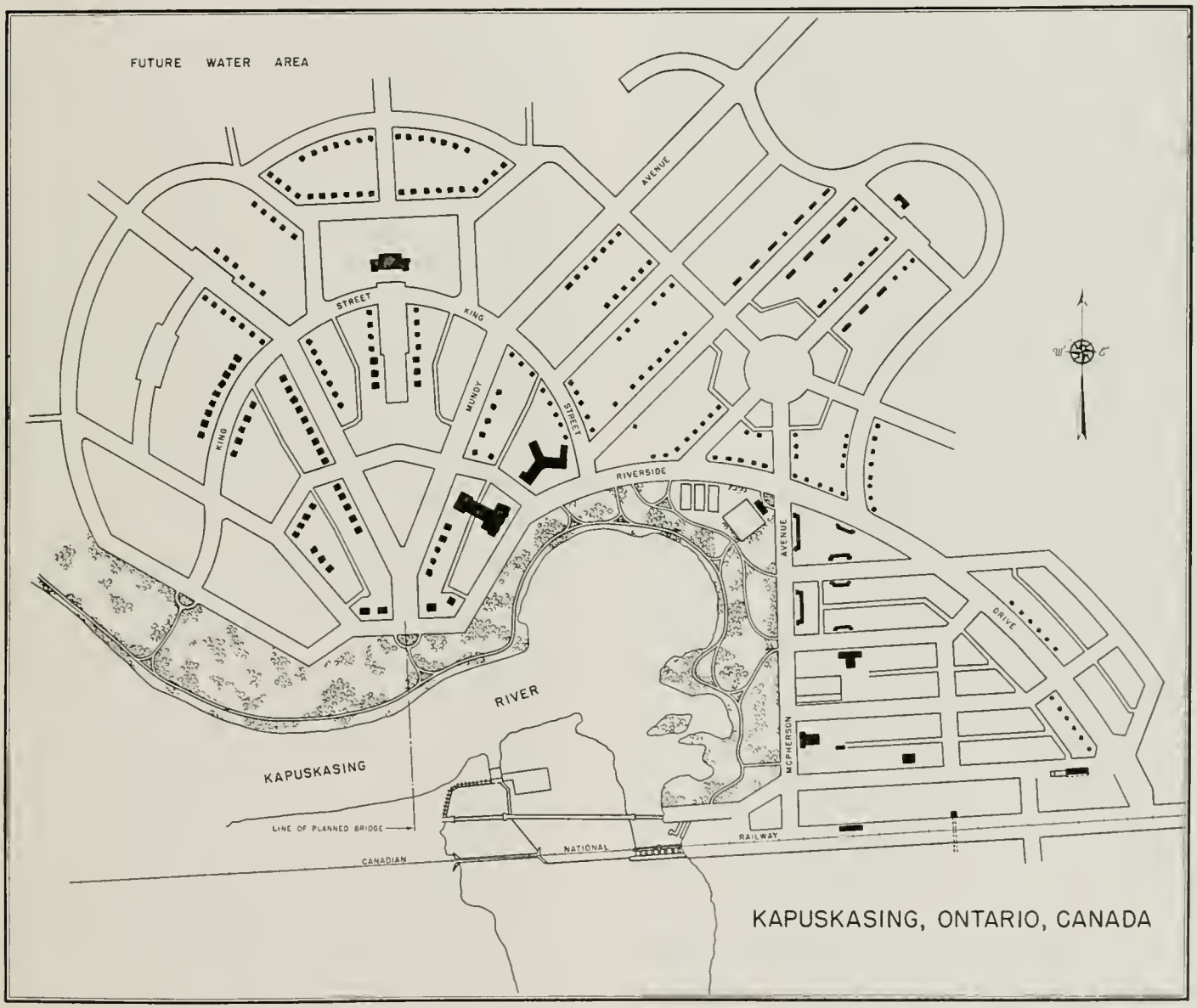



FIGURE 6.—Existing Conditions

No street has been laid out of a less width than 66 feet, and some of the main thoroughfares have an even greater width.

The main arterial highways are the Government road allowances of 66 feet in width adjacent to the railway right-of-way. As the river forms a barrier to these, provision for connecting them and carrying them through the town and across the new bridge was required. Riverside Drive, with a width of 88 feet, fulfilled this requirement * * *.

*Main Business Area.*—A factor in the location of this area was the convenience of access from the station and railway on the one hand, and from the residential areas on the other. Another factor was the development of a dignified entrance in approaching the town from the station.

This area is reserved for business structures of a permanent character.

*Secondary Business Area.*—With the above in view regarding a business center of a permanent type, it was obviously necessary to provide another business district upon which could be erected business buildings of a type immediately required by the new Town. This first type by experience has been shown often to be very temporary and the buildings of cheap construction. Whilst therefore this area too is reserved for buildings for business purposes, the building restrictions are very much modified.

*Park Areas.*—As the town site will be almost entirely surrounded by water after the river is raised, certain portions adjacent to the river were somewhat low for building purposes, and in order to control and secure the use of the water front for the town, the lots were not allowed to come to the water's edge, but this surrounding area was set aside for park and recreational purposes, with the exception of a comparatively small area of water front which would probably be required for industrial purposes. This park and recreational area is about one-ninth of the area above the raised level of the river.

KAPUSKASING, ONTARIO.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | RESIDENTIAL LOTS - 818 |
| RESIDENTIAL | 106.1 | 48.0 | BUSINESS LOTS - 32 |
| BUSINESS | 4.4 | 2.0 | AVE LOT AREA - .13 ACRES |
| TOTAL | 110.5 | 50.0 | |
| PUBLIC AREAS SCHOOLS - CHURCHES AND PUBLIC BLDGS. | 9.2 | 4.2 | |
| PARKS & PLAY AREAS | 26.6 | 12.0 | |
| TOTAL | 35.8 | 16.3 | |
| STREETS | | | STREET LENGTH |
| 66 FT. WIDE | 51.2 | 22.5 | 66' STREETS - 5.8 MILES |
| 75 " " | 5.8 | 2.5 | 75' " - .5 " |
| 86 " " | 10.5 | 4.6 | 86' " - .9 " |
| ALLEYS | 5.0 | 2.2 | ALLEYS - 1.7 " |
| SQS. & CIRCLES | 2.0 | .9 | TOTAL - 8.9 " |
| TOTAL | 74.5 | 33.7 | |
| GRAND TOTAL | 220.8 | 100.0 | |

LENGTH AND AREA OF STREETS AS SCALED FROM PLAN.
SCALE OF PLAN: 1" = 500'

Table 2.

*Public Buildings.*—Locations have been reserved for municipal buildings, schools, churches, hospitals, etc.

*Cemetery.*—The cemetery has been located where natural and easy drainage is possible, and where it will be easily accessible at all seasons of the year. The site is within the municipal limits and not too far from the town site.

*Housing.*—Regarding the initial provision of housing, Mr. A. V. Hall says:

In the agreement between the Government and the company, provision was made that the Government advance to the Municipal Housing Commission in accordance with the Housing Act of 1920, $400,000 for the purpose of building houses for residents of the municipality and company on the lands within the municipality * * *.

* * * The appropriation for the purposes of the Housing Commission provides roughly in its amount for the erection and purchase of approximately 100 houses and lots. As this provision was made to cover a period of years, it was necessary to insure by reservation that the Commission should always have sufficient lots available for this purpose at the original purchase figure. Reservations were therefore made, the greater portion of these being in the area where it is desirable that building take place earliest from the point of view of extension of local improvements * * *.

According to Mr. E. S. Noble, general manager of the company, the detached single-family house has been found most successful because of the privacy afforded, the young age group with young children, the quiet provided shift workers, and the better opportunity for gardens. He further states that, considering the severe winter climate, houses with basements have been found to be more satisfactory, despite a higher initial cost, and more economical over a period of years.

*Community Facilities.*—With regard to community facilities and living and working conditions, Mr. Noble states:

* * * The Community Club, operated by the company, provides a social center for the community and contains a good library, picture show, gymnasium, etc. Grounds for athletics such as tennis, bowling, and baseball are looked after by the club as is the ice arena and curling ice. These endeavors have been successful, in fact they are essential in an isolated community. It is, however, best to provide the facilities and leave the running of the athletics and social activities to the residents.

The company's hotel fills a need in accommodating the higher-paid employees and clerical single men and women. A boarding house for others was operated but outlived its usefulness and was closed.

The modern hospital owned and operated by the company serves the whole community efficiently.

* * * Safe and sanitary conditions in every department of the works pay dividends in low accident frequency and sickness rates. Group insurance and mutual benefit society which insures, has sickness and accident benefits, are very valuable services.

* * * As the development of the townsite coincided with the establishment of the paper mill, no comparison can be made in labour turnover. It may be said, however, that for

the past three or four years no turnover has resulted from dissatisfaction with living or working conditions.

*General Considerations.*—In April of this year, the company employed 739 persons, 85 percent of whom lived in the community. Approximately 30 percent of the wage earners of the town work elsewhere.

At the present time, Kapuskasing is understood to be one of the best towns in northern Ontario and forms the business center for a considerable rural area. The company has a considerable interest in the welfare of the town, although it has no proprietary control. Their policy has apparently been to withdraw from all town enterprises, including stores and small enterprises, as rapidly as private enterprise enters and successfully fills the need.

**Kingsport, Sullivan County, Tenn.**

Present plan established 1915 and 1916 by the Kingsport Farms, Inc., later the Kingsport Improvement Co., Inc. Population in 1930, 11,914; in 1936, 18,000 to 20,000. Town planner, John Nolen. Architect, Clinton Mackenzie.

Kingsport is one of the three industrial cities forming an extensive industrial area in the extreme northeast section of Tennessee. Previous to 1914, the region around Kingsport had not been tapped by rail transportation. The area was, however, rich in natural resources, including water supply, timber, coal, and a variety of minerals. A small settlement nearby had served this area since the Revolution, and efforts had been made at various times to establish it as the navigation head of the Holston River. With the construction of the Carolina, Clinchfield & Ohio Railroad, another small community sprang up adjacent to the railroad and in 1915 included about 900 inhabitants. The location of several large industries indicated the possibilities for future development, and in 1916 the original plan for the town prepared by the engineers of the railroad was considerably revised and extended in order to meet the anticipated growth.

According to Mr. J. Fred Johnson of the Kingsport Improvement Co., the factors which led to the establishment of Kingsport and its subsequent selection as a location by industrial plants have been the result of a favorable coal and water supply. Particular emphasis was placed on the basic factor of planned economic development, guided by a real consideration of human interest, and with a view to ensuring a continuing and adequate supply of unspoiled and fairly treated labor. However, the city was built and promoted primarily as a business enterprise to build up the tonnage on the railroad and to yield profitable returns on the real-estate development. Industries were selected with the idea of fitting them into a closely interlocking scheme, as to product and by-product, water supply and other facilities, and a balanced male and female employment.

*The Plan.*—The plan of Kingsport in 1916 covered an area of approximately 1,100 acres, of which about 260 acres of level area between the river and the railroad right-of-way were set aside for industrial sites, and approximately 110 acres, forming a triangular area north of the railroad, were reserved for the business and commercial district. This plan provided for about 1,575 residential lots, which indicated an estimated population of 6,000 to 8,000 persons. In the same year, the plan was extended to provide for from 10,000 to 12,000 persons.

The topography north of the business center rises rapidly to a ridge which marks the boundary of the residential area, and then drops abruptly toward the north and east. The street system has, in general, recognized the peculiarities of the site in a formalized manner. Radial streets terminating at the Civic Center serve the northern portion of the city, while additional radials serve the eastern section. The disposition of the business center and the residential section to the north was dictated largely by the topography, which has prevented an even distribution of the residential district about the center and resulted in two distinct types of street layout, which have produced a number of unfortunate relationships of streets and blocks.

At the periphery of the city, a linear area immediately north of the residential district was planned for a park, while the area to the northwest was held for future industrial development. Future growth by extension was thus provided for only toward the southwest. A village site, now known as Borden Village, was reserved in the southern portion and separated from adjacent development by a linear park area. Unfortunately, a tract of 9 acres lying near the center of the city, known as the Groseclose property, was never purchased, and this has adversely affected the general layout of the street system.

*Subsequent Development.*—The Clinchfield Portland Cement Corporation and the General Shale Products, now the Kingsport Brick Corporation, were established industries as early as 1910. In 1916 the Kingsport Pulp Corporation, now the Meade Fibre Co., the Kingsport Extract Co., and the Federal Dyestuff & Chemical Co. had been established. These were followed by the Kingsport Hosiery Mills in 1917, the Tennessee Eastman Corporation in 1920, the Kingsport Press in 1922, the Borden Mills in 1924–25, the Blue Ridge Glass Corporation in 1925–26, the Kingsport Foundry & Manufacturing Co. in 1927, and the Kingsport Silk Mills and the Rextex Hosiery Co. in 1928. During this period, the community developed from a population of a few farms to a city of 5,692 in 1920 and 11,914 in 1930, an increase in 10 years of over 100 percent. About 1930, the Borden Mills was the largest

single employer, operating a payroll of about 1,200 men and women. The employment in the six larger industries at that time was in the vicinity of 2,500 to 3,000. It will be noted that in 1930 within the corporate limits, which include 2,930 acres, there was a population about equal to that for which the city was planned.

Kingsport has seen its most rapid growth since 1930, however, during the period of depression when most industrial cities were nearly stationary or declining. It is estimated that the present population within the corporate limits is between 18,000 and 22,000, or an approximate increase of 20 percent over a 5- to 6-year period. In addition, it is estimated that about 5,000 persons live in the areas immediately adjacent to the city limits. This growth is largely the result of the expansion of the Tennessee Eastman Corporation. Established originally to manufacture various wood alcohols, including acetone, methyl, and methanol to be used in the making of film, during the period from 1930 to 1936 it has expanded its plant to include the manufacture of chemical yarns and fabrics, Tenite—a product similar to hard rubber—and compressed charcoal briquettes. Its pay roll has thus increased from approximately 400 employees at the beginning of this period to 3,700 in July of this year, about 300 of whom are women. It has thus become the dominant industry, as it now employs about 53 percent of the present total industrial pay roll. The Kingsport Press at this same time was employing 357 men and 195 women or a total of 552 persons. These two industries now form the key industries of Kingsport, the latter representing a higher wage group because of the nature of its product.

It should be mentioned in addition that several of the industries, including the foundry and the extract company, have gone out of business during this period. The Blue Ridge Glass Works, a subsidiary of the Corning Glass Works, manufacturing building glass, and the cement company have been operating 4 to 6 months out of the year, and the brick company has just reopened after being shut down for several years. However, we are not primarily concerned with the effects which this rapid change of industrial balance has had upon the scheme of interlocking industries, but rather with the effect this rapid growth as a whole has had upon the physical development of the city.

The neighborhoods of "The Fifties," "White City," and the Borden Mill Village represent the early efforts which were made in Kingsport to create a unique char-

FIGURE 7.—Existing conditions

acter and to develop a superior type of community to that usually found in industrial communities of the United States. In the business districts, the same effort was made in several of the business buildings, the railroad station, and the Kingsport Inn. However, with the rapid growth which has taken place between 1920 and 1936, the perpetuation of this character has been largely disregarded by independent builders who purchased land from the improvement company. Certain areas east of Sullivan Street, sold without adequate restrictions, represent the extent to which development has fallen below that originally contemplated. This is particularly true on Dale Street in a colored section, where slab houses are crowded three on a lot, and lots have been resubdivided to provide for close rows of one-story cottages. The business district provided in Kingsport was exceptionally large, about 10 percent of the area within the original land purchase and including some 28,000 lineal feet of business frontage. Again applying the norm of 0.5 foot per capita that was used in discussing Fairfield, Ala., the business frontage provided for a population of some 55,000 persons. As might be expected, a large proportion of this area is at present vacant, partly, however, because the developed business facilities have not kept pace with the rapid population growth of around 15 percent per year; and therefore the present conditions do not represent a true balance between business facilities and population. At the present time, only about 23 percent of the allotted area is occupied by business, varying from temporary structures to those originally built at Main and Broad Streets. In spite of the large vacant areas still lying idle in the business district, sporadic business development has been allowed to take place in areas not designed for it, notably at Charlemont Avenue and Boone Street, to the detriment of both the original business section and the residential area adjacent to the unplanned business development.

Sporadic development has not, however, been confined to the original Kingsport tract. The development of adjacent areas was stimulated by the rapid growth of the city; and shack towns have sprung up, notably just outside the city limits, which vary from mountain cabins costing $400 or $500, "box" houses costing around $1,500, and log-type cabins at a similar cost, to modern frame houses with some city improvements, but without sewers or water, costing around $5,200. Much of this development is of scattered outline, without any relation to the original plan; and as no provision was made to acquire or control sufficient land at the periphery of the original tract to protect its character, these shack towns are contiguous to the parent city. A typically poor development is situated at the base of the ridge beyond the northern boundary of the town. Similar development has taken place on "Long Island," south of the industrial district of the Tennessee Eastman plant, which is subject to periodic flooding by the Holston River. About 1,000 houses outside the city limits lack sewerage and water facilities. In addition, squatters have been allowed to build shacks on land still owned by the improvement company, to which the city has extended water and sewer facilities. It is estimated that about 80 percent of the wage earners in Kingsport live outside the city limits at the present time. This would seem to be a rather high percentage. Also, it is estimated that only about ten percent of the trading is done outside the city, which is a small proportion, particularly considering the business provisions within the city now unused.

Thus, in Kingsport can be seen at the present time much the same processes rapidly taking place which are so typical of our cities in general. First is the letting down of standards within the city and the creation of miniature slum conditions. Second is the inevitable contiguous growth at the periphery on land over which no control was exercised, and third, the encouragement given to poor development by temporary or makeshift structures in an attempt to meet the demand for low-cost housing. It should be observed that Kingsport has shown an exceedingly high rate of growth, which has created both internal and external pressures exerting a tremendous strain on the original provisions geared to a population half as large as now exists. There is every reason to believe that the growth in Kingsport may double itself again within another comparatively short period, in which case all the area originally allotted for business will be needed. If, however, the city expects to retain many of the advantages offered by its original plan and provided in "a city built to order," these provisions must both catch up with the growth that has already taken place, and be ready for that which seems likely to occur in the near future. This may be accomplished by more stringent restrictions on the use of land yet to be developed within the city limits, by the adoption of a zoning ordinance, which does not exist at present, by the extension of the city boundaries in order to exert prior control over land destined for near future development, and by the creation of an adequate planning agency to organize this future development into a comprehensive scheme which will relate to and extend the original plan to meet the anticipated needs in advance of demand.

The problem of correcting the undesirable growth which has been permitted is, however, in exactly the same status as in any unplanned city. The city has passed the period in which a private development company can be successful in regulating and directing future

growth. This problem is now a municipal function. A step in the right direction is being made by the improvement company, which is extending the original plan by laying out an area for over 1,000 houses. This area is being designed by Earle S. Draper. It is regrettable, however, that this development must include all of the present golf course, which, although originally planned for residence, is now one of the few areas of any size in the city limits remaining for recreation. According to an estimate of public open spaces retained by the city, made from the city engineer's maps, about 2 percent is at present allotted to permanent park and recreation, including school grounds. This again is an example of the results of rapid growth causing pressure which was not resisted or directed by a strong administration and adaptation of the plan.

*Housing.*—The subject of housing has been partially discussed above to bring out certain phases of the subsequent development of Kingsport. Unlike many of the communities studied, there is a rather wide range of house types and values. "The Fifties," adjacent to Sullivan Street, "White City," and Borden Village represent the best type of housing to be found in the city, with the exception of the upper part of Watauga Street, which is devoted to high-class residence ranging up to $17,500, and adjacent development averaging around $5,000. "The Fifties" was one of the first groups of houses to be built and comprises 55 houses of great charm grouped about a one and a half acre park area and overlooking the flats to the north. The houses consist of single-family units of stucco and half timber designed by Mr. Mackenzie and form a charming neighborhood which has retained its individuality. A number of the houses are rented, six being owned by the Kingsport Press which rents them for $25 per month with interior maintenance taken care of by the individual tenant. The remainder rent for about $40 per month from individual landlords. "White City" forms a group around Elm Court and consists of well-designed white frame houses. Borden Village consists of 283 houses of frame, brick, and stucco and brick, ranging in cost from $2,200 to $3,000 and centering around a small park place. The village is almost completely separated from other development and, in spite of the fact that the original house designs have not been carried through entirely, is the most charming low-cost section of Kingsport. Rentals are from $8 to $10 per month. It is interesting to note the presence of the mill village within a larger urban area. It was stated by an official of the plant that it would be impossible for the mill to operate without the provision of the village. The reason for this condition is probably to be found in the strong competition for labor as a result of the recent expansion of the Tennessee Eastman plant. The Borden Mills provide for about 60 percent of their employees in this manner.

The Eastman Corporation has provided 3- to 6-room housing for a few of their key employees, costing around $2,500 and renting from $15 to $24 per month. These are to be found in what is called Edgewood and Beechwood Village, and are distinctly inferior to the developments discussed above. Recently, the company has sold 1- to 3-acre lots to employees at nominal cost with $2,000 minimum building restrictions. The company does not make a policy of housing or financing housing for their employees. It would seem, however, that some of the present conditions contiguous to the city limits could have been avoided had the company assumed this responsibility in a situation largely brought about by its own rapid expansion.

Aside from the residential districts already mentioned, the housing consists largely of one-story nondescript cottages. Apparently, the conflict of ideals with the opportunity to "turn a dollar" has been responsible for the slum areas, jerry-built housing, and inefficient layout just as it has been in most of our urban areas today.

*Appearance.*—The only parts of Kingsport which represent what might be expected in a planned community are those sections already mentioned, namely "The Fifties", "White City", and Borden Village. However, the planting of street trees has been carried out with a great deal of completeness throughout the original town and is highly effective. The treatment of Broad Street is striking and pleasant, whatever its drawbacks in handling traffic; and when completed, the civic center at the Circle, consisting of Kingsport Inn, the Kingsport Utilities Corporation Building, and the post office, with a site reserved for a library, will be a successful composition. This focal point of the town gives an indication of the quality of mutual relation which might have existed throughout. It is to be regretted that the proposed park areas facing Broad Street and bounded by New and Center Streets have been subdivided into business lots. They are still vacant, however, and if returned to their use as planned, would greatly help the effect of the civic group as well as provide much needed permanent open recreation area. The presence of street trees in the business area should be mentioned as they are highly effective and screen to some extent the litter of overhanging signs over the shops on Broad Street.[2]

*Community Facilities.*—The community spirit in Kingsport would seem to be largely that spirit existing in a young boom town which is growing rapidly. Indications of this spirit are to be found in the four times

[2] Both the central park strip and the street trees have been removed since this survey was made in 1936. This has resulted in destroying one of the city's most pleasant features.

oversubscription of the community chest in 1933 during the height of the depression, which included funds for a hospital which has now been completed.

A school system organized according to the Gary, Ind., method is maintained. The selection of the teaching staff is made from many colleges and does not rest necessarily on available teachers from the vicinity but includes teachers from outside the State as well. There are four grade schools for white and one for colored students and one high school with stadium and athletic field. The grade schools are provided with grounds ranging from 1.34 acres for the colored school (which is a good proportion, considering the small colored population of 5.1 percent) to 3.3 for the Robert E. Lee School, 4.8 acres each for Jackson and Lincoln Schools, 6 acres for a new school, and 8.2 acres for the high school.

*Government.*—In spite of the present large population of Kingsport, there were only 1,300 registered voters in 1935 to participate in the government of the city. The municipal government is council-manager in form, a council of five members being elected for 4-year terms. They appoint the mayor from their body, and he, in turn, appoints the city manager. The city charter was prepared as a model charter by the Bureau of Municipal Research established by the Rockefeller Foundation. Platting and building regulations have been enacted, although use regulations depend entirely on private restrictions. The city owns and operates its own water supply.

*General Considerations.*—Certain defects which are apparent in Kingsport may be summarized as follows:

1. The plan is organically weak in respect to acute-angle intersections and through-traffic provisions but is excellent in other respects.

2. The sale of lots without restriction has permitted advantage to be taken of certain weaknesses in the plan to the detriment of these lots and surrounding property, and has allowed undesirable residential development in the low-lying areas, and an inadequate protection of the borders of the development, permitting undesirable shack growth at points abutting the developed plan.

3. The rapid growth beyond expectations has permitted evils to creep in and crystallize before they could be foreseen and adequate provisions made to prevent them on a plan geared to only 10,000 to 12,000 population.

4. Squatters have been allowed to come in on Improvement Co. land with the city extending water and the power company extending light to them.

5. There is a lack of adequate public open space—at the present about 2.2 percent is considered as permanently in the ownership of the city.

6. Inadequate permanent restrictions, with no provision for zoning, have been used to replace the gradual withdrawal of the Improvement Co.'s enforcement.

7. Industrial areas are too close to certain residential districts, notably on Roller and Sullivan Streets.

8. Too much business and commercial area was provided for a development of twice the size planned.

9. There has been no architectural control.

Mr. Johnson has stated that a good town must provide the following essentials: good schools; a clean city government; fairness to all of the people; and the privilege of working.

It is believed that all of these objectives have been attained, and yet it may be observed that a fifth consideration is fully as important if the above essentials are to work most efficiently. That is the integrity of a sound and comprehensive physical plan of development which, once set up, should be closely guarded. Kingsport is at present suffering more from the pains of too rapid growth than from its organic defects. It is easy for such conditions to occur, but when once established, they are difficult to remove. The same causes that have created the slums and decadent areas in our larger urban centers may be recognized in their primary stages in Kingsport and may still be avoided in the development which will take place in the future.

**Kohler Village, Sheboygan County, Wis.**

Adjacent to Sheboygan Falls and 4 miles west of Sheboygan. Incorporated in 1913. Developed by the Kohler Co. City planners, Hagemann and Peets, later Olmsted Brothers. Architects, Brust and Philipp. Present approximate population, 1,850.

Kohler is an early example of industrial decentralization. John M. Kohler, who had established the company in Sheboygan in 1873, moved the plant in 1899 to a farm-land site about 4 miles west of Sheboygan. The site was in rich and beautiful rolling country on the Sheboygan River. The Chicago & Northwestern Railway and the W. P. & L. Railway both passed through the location. A few homes appeared near the plant after its establishment here, but it was not until the incorporation of the village in 1913 that a serious study was made with a view to developing a community. In 1916, plans for the town were completed, and except for the period of the World War, development has continued with little interruption and with no change of any consequence in the original plans. The Kohler Co. is the one industry in the town. During its early years, the company manufactured enameled iron plumbing fixtures, but in later years, it has added large facilities for making vitreous china fixtures, plumbers' brass and woodwork, individual electric plants, and recently a comprehensive line of boilers and radiators. The operation of the factory

and the kinds of skill required cover a wide range, and standards of workmanship are exacting. Thirty-two hundred persons are employed by the Kohler Company, a large part of whom are of German extraction.

*The Plan.*—The plan of Kohler expresses an attitude of mind on the part of the inhabitants which is not always found. They do not look on the factory as a necessary evil but rather as the center of the community, to the operation of which everyone contributes and of which everyone is proud. The plan shows thoroughly coordinated facilities and allowance for their expansion. Areas for recreation, industry, business, and residence are included, but there is no center of the town which gives dominance to the retail purchasing and government function as is frequently the case. The plan of Kohler Village is influenced by both the topography of the land and the ox bows of the Sheboygan River. The plan shows no major focal point. The residential area is cut into quadrants by the Chicago & Northwestern Railway and the Sheboygan River and Ravine Park. The two residential quadrants to the north of the railway are also traversed by the W. P. & L. Railway. The industrial area lies adjacent to the northwest, across High Street and the Chicago & Northwestern Railway from the residential areas. The total area developed to date is about 1,000 acres. Blocks are mostly 500 feet or less in length. Lot sizes vary from 50 to 62 feet in width by 90 to 160 feet in depth. Density is about 6.6 families per net acre.

*Housing.*—Most of the 375 houses in Kohler have been built by the Kohler Improvement Co., a nonprofit development corporation. High architectural talent is employed, and with the advantage of quantity purchase of materials, large-scale operations, and unified supervision, the construction cost of housing has been low. Individual character has been achieved even though houses have largely been constructed in groups. Many of the houses have been constructed according to the individual's requirements and wishes. Houses are all sold, and financing is provided by the local building and loan association. In the deeds are restrictions against the use of property for other than residential purposes or for illegal, immoral, or nuisance purposes; otherwise there is no limitation as to the use or disposal of property. Homes are mostly of a detached type. Costs in 1927 ranged from $5,000 to $12,000. Demonstration houses for the years 1925 to 1930, inclusive, were reported in *Kohler of Kohler News*, July, 1931.

TABLE 3.—*Demonstration houses, Kohler Village, 1925–1930*

| Year | Lot size | Rooms | Garage | Cost complete (all improvements) |
|---|---|---|---|---|
| 1925 | 50 by 160 | 6 and bath | None | $6,819.25 |
| 1926 | 57 by 112 | 6 and bath | do | 5,459.00 |
| 1927 | 60 by 90 | 6 and bath | Detached | 6,825.47 |
| 1928 | 62 by 100 | 8 and bath | do | 7,090.00 |
| 1929 | 60 by 102 | 6 and bath | do | 8,548.65 |
| 1930 | 56 by 137 | 6 and bath | do | 6,434.24 |

The present assessed valuation of Kohler per family is $6,200, or $1,460 per capita. The average local tax rate for the past 3 years per $100 is $1.50, based on 97 percent of a 1935 fair market value.

*Government.*—Though the community of Kohler has been built by the Kohler Co. and its subsidiaries, it is not run on a paternalistic basis. Kohler is incorporated under the laws of Wisconsin and has the prescribed form of government, consisting of a president, village board, and necessary administrative officers.

*Community Facilities.*—Kohler has a public school adjacent to Ravine Park in the northern half of the village. The school consists of elementary grades and junior and senior high schools. Special departments provide instruction in commercial subjects, manual arts, home economics, fine arts, and music. The latter receives special emphasis. Instruction is given in vocal music, piano, and all band and orchestral instruments. A large number of pupils take musical training of some kind.

A greater community life is fostered by an unusually large and varied number of clubs and organizations. Excerpts taken from the brochure entitled *Kohler Village* describe in some detail the various organizations and activities as follows:

> An active and influential body in the Village is the Woman's Club, which has for years fostered an interest in the arts, civic progress, and home development. The annual Better Homes activities, of incalculable value to the community, have been arranged and sponsored by the club, which has also joined with the Civic Club for many years past in arranging each autumn an interesting Village fair and offering awards for the best kept grounds and gardens. Each year the health committee conducts a baby clinic at which preschool children are examined by a physician who advises as to their physical needs. The Kohler Woman's Club in 1927 won recognition from the General Federation as 1 of the 10 leading larger clubs of the United States in point of rendering service appropriate to the needs of the community. * * *
>
> Several large and enthusiastic troops of Girl Scouts and Boy Scouts provide training and wholesome pastime for the younger people. * * *
>
> The Kohler Village Drama Guild is an organization only a few months old, but with a considerable membership of people

interested in reading, studying, discussing, and presenting plays. It is really representative of the Little Theater idea.

While the activities of the school and of the various organizations bring about many public performances in music, drama, and other forms of expression by local people, the residents of the Village also have numerous opportunities to see and hear professional talent. * * *

Many of these entertainments have been arranged by the Kohler Recreation Club, an organization in which a large part of the people living in the Village or employed in the business are members.

An entertainment of a totally different sort, which this organization has provided annually for many years, is the Kohler field day, customarily held in August. On this occasion the people of the factory and Village, together with their families, numbering in all many thousands, assemble in Ravine Park and enjoy a day of games, sports, music, dancing, and entertainment so varied as to interest people of all tastes and ages.

Principally, however, the Recreation Club is a parent organization, a sort of coordinating factor over a large number of specialized organizations, such as the bowling league, baseball league, basketball league, rifle club, tennis club, horseshoe pitching club, and several more. * * *

In addition to sports, the Recreation Club maintains a volunteer band of about 50 men, a junior band of about the same number of public-school pupils, and a music studio where private instruction can be obtained. * * *

Ravine Park, mentioned in the foregoing quotation, includes an outdoor theater located in the north end and in close proximity to the school site.

The American Club provides residence for single men working in the Kohler plant. This building, set opposite the factory grounds, is architecturally suggestive of a university hall. It contains rooms for about 300, has a dining hall open to all, and recreational facilities such as bowling alleys, billiard tables, and a reading room.

In an isolated part of the village has been built "Waelder Haus," built by Marie C. Kohler in memory of her father, John Michael Kohler, and given to the Kohler Girl Scouts, which she organized in 1919.

**Longview, Cowlitz County, Wash.**

Developed by the Long-Bell Lumber Co. Founded in 1922 by R. A. Long, founder and chairman of the board of the Long-Bell Lumber Co. First subdivisions released for sale in February 1923. Incorporated, February 1924. Present estimated population, 14,000. Planned for 50,000 population. Town planners, Hare and Hare. Planning consultant, George E. Kessler. Realtor consultant, J. C. Nichols.

The Long-Bell Lumber Co. of Kansas City, Mo., in 1922 purchased an extensive tract of fir and hemlock timber in southwest Washington, starting about 15 miles north of the Columbia River. The work of the company included the complete manufacture of lumber as well as the logging of timber, and this required the location of a mill adjacent to rail and water transportation. It also necessitated the employment of a large number of people. This, in turn, brought about the consideration of a complete town—not a company town, but a general industrial city.

*Location.*—The geographical location of Longview is strategic. Its position 50 miles from the ocean on the Columbia River, which carries a substantial amount of Pacific-coast water commerce to Portland 50 miles farther inland, offers a deep fresh-water harbor, 3,300 feet wide. A natural outlet for both highways and railroad at water grade is offered by the Cowlitz River Valley to the Puget Sound country to the north. This river also is suitable for 5 miles for barge service. The Columbia River Valley south and east constitutes an important gap for railroads and highways through the Cascade Range to the east, while the Willamette River Valley opens to the south toward California. Adjoining Longview on the east is Kelso, Wash., which had a population in 1922 of 2,500 and in 1930 of 6,260, according to the United States Census. Across the Columbia River on the south is Rainier, Oreg., of less than 2,500 population. The site of Longview was served by three railroads, the Northern Pacific, the Great Northern, and the Union Pacific, and is now served by a fourth, the Milwaukee.

The site of the town was determined and optioned as the logical point for milling and manufacturing lumber. The site consisted originally of 3,000 acres, which was enlarged in 1926 to 5,200 acres. Two-thirds of the site of the town is a rich alluvial plain, while the balance rises to an elevation of 400 feet. When acquired, the land consisted largely of unimproved farms devoted to diversified agriculture. The elevation of the valley varies from a few feet above tide level to 30 feet or higher at the point chosen for the center of the city. A topographical feature of the valley is Mount Solo, more than 560 feet high and about 2 miles long and 1 mile wide, which rises from the valley floor about 2½ miles west of the civic center.

*The Plan.*—The plan of Longview is essentially gridiron with diagonals and circumferential main thoroughfares. Four radial thoroughfares converge on a central park area, one of which is offset to permit railroad spurs into an industrial district. The gridiron pattern is not carried across main radials, but the various units are connected across by streets at right angles to the radials. A section planned to the north of the central district has a system of curvilinear streets due to the topography.

Street widths vary from 50 to 60 feet for residential streets with 24- and 25-foot roadways, and from 80 to 100 feet for business streets with 60-foot roadways, to 120 feet for main thoroughfares. Alleys 20 feet wide are provided in the business area and in most of the residential areas. The reason for planning alleys in

residential districts was the use of slab wood from the mills for fuel in the homes and the need of easy delivery of the wood to the rear of the lots. Mr. S. Herbert Hare states in his article on Longview in the *Town Planning Review*, December 1925, that "Experience has proved, however, that many people, especially in the better residential districts, provide private drives regardless of the alleys, and there is some question as to their value in these districts."

Block lengths range from 300 to 500 feet in business districts and from 600 to 1,100 feet in residential districts. Standard lot sizes are 50 by 120 feet, with a few 40 by 120 feet in smaller residence districts. Block widths, therefore, with 20-foot alleys, are 260 feet. A considerable area of most fertile land is developed as suburban residential and agricultural acreage tracts ranging from ¾ to 5 acres.

Public open areas are provided by the central 6-acre park known as Jefferson Park, by the 100-acre Lake Sacajawea Parkway, by various play areas adjacent to main drainage ditches, by an area on Mount Solo and along the Cowlitz River front, and by certain steeper portions of the hills to the north. In the latter area is located a nine-hole golf course.

The Lake Sacajawea Parkway is about 1½ miles long and 500 to 800 feet wide. The lake, which serves as an equalizing reservoir in the system of surface drainage, was formed by dredging an old channel to the Cowlitz River located about one-half mile west of the central park. The channel has been landscaped into what really amounts to a series of small lakes. Sites adjacent are of scenic value and have been used for churches and clubs, a community hospital, and a Y. M. C. A. building, as well as for residences of a high type.

Suitable school sites have been reserved, of 5 acres or more each, as well as a 30-acre high-school site. A cemetery is located on the westerly portion of Mount Solo.

*Housing.*—The plans for Longview contemplated detached single-family residences individually owned. The United States Census for 1930 gives the total num-

FIGURE 8.—As planned

ber of one-family dwellings as 2,407, two-familiy dwellings as 21, and three-or-more family dwellings as 52. Financial aid extended by the founders has been largely temporary and secondary except for unconditional gifts of Mr. Long, amounting to over $1,000,000 for a library, Y. M. C. A., certain parks, and high school. Property was sold by the usual real-estate contract of sale and conveyed in fee by warranty deed when payments were completed.

Several residential districts, an apartment house district, suburban acreage, a retail business district, a manufacturing district, and a section devoted to light industrial and wholesale enterprises were developed by the Long-Bell Lumber Co. Today it is estimated that 60 percent of the homes in Longview are occupant-owned.

Since there was no State enabling act in Washington nor an incorporated city administration at Longview to make use of such an act, control to insure the proper use of land was made through private restrictions. As a basis for the private restrictions, zoning maps were prepared, showing residential, apartment, central retail business, local business, and light and heavy industrial districts. Mr. S. Herbert Hare states that "Most of these restrictions were filed with the plots, although in a few cases certain restrictions were placed in the deed. The restrictions were self-perpetuating—that is, they operated through an initial period of a certain number of years, and will be automatically renewed unless, 5 years prior to the expiration of the initial or subsequent periods, a majority of the frontage owners in any given district petition for a change or abandonment of the restrictions."

Mr. Hare states further that "One of the principal problems faced in the planning was proper provision for reasonable expansion of each separate type of land use without early conversion of land from one use to another. It was necessary, under such an arrangement, to start what might be called 'nuclei of development,' each in its permanent location, and connect these by a system of main and secondary streets with their accompanying services."

Restrictions have been called complete but not drastic in their requirements. Building lines (usually 25 feet from street and 4 feet from side lot lines), building height, racial, and minimum cost restrictions in addition to other building restrictions accompany deed or plat. Maximum population without the conversion of uses was planned for 50,000 in the entire planned area, which included the present incorporated town and some suburban area. Restrictions allow the increase of population several times in suburban areas, while in the urban area the density is restricted, except in certain apartment-house districts, to approximately five families per gross acre.



*Subsequent Development.*—In 1930 the United States Census gave Longview a population of 10,652 and the adjacent towns of Kelso City and Rainier, 6,260 and 1,353, respectively. In 1935, it was estimated that 20,000 persons had been added to the population of the valley in which Longview is situated. It was estimated that 3,000 to 3,500 were living in the suburban planned area outside the corporate limits of Longview. Many homes have been built on the 1- to 5-acre tracts west and northwest of the city proper. One hundred and forty acres of valley land have recently been developed as a subsistence homestead project. Mr. Hare gives the following picture of the status of Longview as it is today:

> * * * While the city is now thirteenth in population in the State of Washington, it is twelfth in retail sales, and the business center of a rich agricultural territory. There are 72 business buildings, containing 192 stores, and in addition 36 industrial plants. These industrial activities include, besides the 2 mills of the Long-Bell Lumber Co., each one of which is unequalled in size by any other mills in the world, the very large mills of the Weyerhaeuser Timber Co., 3 wood pulp mills, a grain elevator, a canning plant, 2 marine oil plants, a plywood factory, a brass foundry, concrete products plant, paint and varnish company, etc. The port of Longview is a busy place, with many ships discharging and taking on cargoes at the docks. Log trains coming in from the woods to the lumber mills are often a mile or more in length. Since 1931 the average number of men employed in Longview has increased from 2,948 to 3,866, with a total annual pay roll increase from $3,554,088 to $4,491,197.

The economic depression was seriously felt in the lumber industry, but business is now reviving, and in Longview, the vacancy in houses is less than 3 percent with a small vacancy in business buildings. The Long-Bell Lumber Co. still owns about 60 percent of

LONGVIEW, WASH.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | |
| RESIDENTIAL | 2810 | 70.0 | NORMAL LOT SIZE-40'-50'x120' |
| BUSINESS | 186 | 5.0 | AVE LOT AREA - 6000 SQ FT. |
| TOTALS | 2996 | 75.0 | |
| PUBLIC AREA | | | |
| OPEN SPACE | 300 | 7.5 | |
| TOTALS | 300 | 7.5 | |
| STREETS | | | |
| 50-60-80-100 FT. | 704 | 17.5 | |
| TOTAL | 704 | 17.5 | |
| GRAND TOTAL | 4000 | 100.0 | |

BASIS FOR FIGURES WAS AREA IN ORIGINAL CITY LIMITS EXCEPTING INDUSTRIAL AREAS, CASCADE HILLS AND SUNSET ADDITION.
SCALE OF MAP: 1" = 1000'

Table 4.

the original land purchased but is selling this off as fast as conditions permit.

The depression has caused a problem in city administration. Heavy investments in power lines, water mains, pavements, and sidewalks, for only one-quarter of the planned population, have resulted in a financial problem that has forced, temporarily at least, the abandonment and curtailing of needed city functions. The tax levy is limited to 15 mills by law, and property valuation has been low, which has resulted in insufficient income properly to operate the city.

Since the national capital was planned by L'Enfant under President Washington, Longview is the largest completely planned new city on undeveloped land. It will stand as an example of what can be provided in attractive living and working surroundings in contrast to the usual conditions in unplanned communities. It was given sufficient impetus by its founder to weather the depression of the early 1930's, and with better economic conditions, it should continue the controlled growth, as planned, of a modern, independent city, free from the domination of any one interest.

**Silvertown, Upson County, Ga.**

Established in 1929 by the Martha Mills Division of the B. F. Goodrich Co., producing cord. Incorporated in 1929. Population in 1930, 2,171; in 1936, approximately 3,200. Population of the combined towns of Thomaston, East Thomaston, and Silvertown, in 1930, 10,154. Town planner, Earle S. Draper. Robert & Co., architects.

Silvertown adjoins Thomaston and East Thomaston, Ga., the former depending for its activity largely on textiles and on peach, cotton, and pimiento crops, the latter being an incorporated mill village serving Thomaston Mills and developed by Mr. A. T. Matthews, present general manager of the Martha Mills. The reasons given for the location and establishment of Silvertown are concise and full of interest, especially considering its recent establishment. The accessibility of raw materials was not a consideration in location, the major determining factors being the availability and adequacy of a trained labor supply for facility of manufacture, the presence of rail and truck routes (it should be noted here that almost the entire production of cord is shipped to the Akron plant), the availability of an industrial clear water supply and of hydroelectric power, the advantages of climate, and a location in the foothills affording excellent drainage conditions. The desire for "peace and quiet" in order to carry on business activities and to obtain the "peace of mind necessary for a contented and happy population" was a primary factor in providing the village facilities found at Silvertown, according to Mr. Matthews. The ability to pay the highest possible wages and at the same time provide the lowest possible living and rental costs was considered impossible except where the company could be free from the conflicting influences of the city. Reference to section 3 will indicate the relative status of Silvertown in this respect.

FIGURE 9.—Typical street, Silvertown, Ga.

*The Plan.*—Silvertown consists essentially of three villages. Two, known as the northeast and southeast sections, lie on either side of the 30-acre plant site, the third, consisting of what is known as the northwest and southwest sections, or West Village, is situated at the west end of the central major street which parallels the plant and intersects the highway approach to Thomaston. At this intersection, the combined business and community center is located. Peripheral land to the north and west is owned by the company. Portions of the east and south boundaries, however, are contiguous to inferior sections of East Thomaston and Thomaston, respectively. In addition, a tract of 30 acres lying between the northeast and northwest sections is still in private ownership and is being held at a price not considered reasonable by the company. Its intrusion into the town site has been one of the controlling factors in layout. The wooded character, topography, and location of this land in private ownership make it especially desirable for park and recreational use. At present, it is occupied by a filling station, a group of vacant store buildings, and several houses, all of which detract from the adjacent village development.

*Housing.*—Nearly all of the houses in Silvertown are of one-story cottage type and are well built and excellently maintained. They are similar, except for type of construction, to those used in Chicopee. The three- and four-room houses have a ground coverage of a 31-foot 8-inch frontage and a 33-foot depth; and five-room houses have a frontage of 45 feet 4 inches and a depth of 32 feet. A street frontage of 60 to 65 feet per house lot is provided, thus affording adequate side yards which, together with the use of composition and asbestos shingles, achieve a relatively low fire hazard. Lot depths vary from 120 to 180 feet, with a 30-foot setback from the street line. Garage groups have been located as the demand for them has

dictated, with a treatment similar to that used at Chicopee. Where alleys have been used, they have been well screened by planting.

It is estimated by Mr. Binford, construction engineer for the town, that about half of the cost of sewer and water service lines has been saved by locating mains immediately in the rear of the house rows rather than in the street. This method requires double lines within the block, but proportionately smaller sizes and very short house connections. It likewise complicates individual ownership which, however, is not contemplated here. Fire mains are laid in the street and connect in each block with the interior service lines.

Each tenant is allowed the freedom of caring for his own yard, and, in general, maintenance is excellent. Base plantings are left to the discretion of each inhabitant. Prizes are offered by the company for the best-maintained yard in each of the three villages. It is of interest that the company uses the quality of yard maintenance and appearance as an index to the character of the employee.

*Appearance.*—Silvertown at present suffers from its newness, which will take some years to overcome. When this period is passed, it will in most respects compare favorably with the excellence of Chicopee. The unpaved streets have been perhaps the most objectionable feature, as the red Georgia dust forms a depressing blanket over the entire town. However, most of the curbs, sidewalks, and planting strips are installed, and street paving was just starting at the time the community was visited. Another deficiency is the absence of street trees. Although the public areas and factory site are well planted, many of the streets are still devoid of any trees. A comparison with a policy such as that adopted at Alcoa or with the results already attained at Chicopee, which is but 2 years older, emphasizes this omission. "White way" lighting has been used in the central portion of the town and adjacent to the plant. Elsewhere overhead wiring has been confined to the rear of the blocks, with distinctly beneficial results.

*Community Facilities.*—The company has made every effort to provide adequate physical recreational facilities for the town but has left the organization of activities largely to the people themselves, with very satisfactory results. It is significant that the population is adequate here to justify certain facilities not economically possible at Chicopee. These facilities include three schools, serving about 600 grade and 100 high school students, which are owned and supported by the company, and two churches to accommodate the equally divided denominations, a situation similar to that at Chicopee. They have been identically built and located in order to avoid any appearance of favoritism. About 30 acres are included in the school grounds and ball field. The need for more playground area is reflected by the desire of the construction engineer to reverse the house plans and adopt some form of interior park system in any future extensions. As already noted, the attractive possibilities of the 30-acre tract in private ownership should not be overlooked as a needed park and recreation area. The provision of an excellent moving-picture theater is a unique adjunct for a town of this size. While the company owns the business buildings, they are operated privately. In addition to the central business group, a local grocery store is conveniently located in each village. Various community activities include a town band, garden club, mothers' club, girl and boy scout troops, and ball teams. In the opinion of Mr. Matthews, the homogeneous population, combined with local management, has built up a community loyalty and spirit which have automatically resisted the general labor unrest and influence from outside sources.

*Government.*—Although incorporated under State laws, Silvertown functions in much the same way as Hopedale, Mass. The town operates under a town manager and three commissioners appointed by the company. As already mentioned, the schools are owned and operated by the company. With this setup, the town pays no local taxes. Two full-time policemen and a volunteer fire department furnish protection. It may be noted here that a certain police protection by day is furnished to workers employed on night shifts which removes annoyance by canvassers, tradesmen, and the like. This may be considered by some as a gesture of paternalism and undue supervision of the private lives of the employees. However, when visiting Chicopee and apparently wandering about the town without good reason, the investigator for this research was accosted by a member of the police force, who, upon learning that no house-to-house canvass was being made, stated that it was his job to protect homes where employees were asleep and gave him carte blanche to continue his observations.

*General Considerations.*—Vacant land in and about the town has been put to good use by planting peach orchards which are now bearing, the fruit being distributed to the inhabitants without cost.

In reply to the question of company subsidy, Mr. Matthews stated that in his opinion it made little difference whether the cost of town building is absorbed by a company, which is thus able to give low rents and a tax-free town with only county taxes to pay, or whether the company is forced to pay taxes and higher wages to employees who must, in turn, pay higher rents or own their own homes at higher cost.

It may be observed that considering all factors involved, such towns as Silvertown, Chicopee, and others are offering more not only in real wages but in better

living conditions and desirable environment for wage earners than can be found elsewhere except at much higher income levels.

**Torrance, Los Angeles County, Calif.**

Founded and developed in 1912 by Jared Sidney Torrance. Later developed by the Dominguez Land Co. Incorporated in 1921. Approximate population in 1936, 7,280. Town planner, F. L. Olmsted. Architect, Irving J. Gill.

*Location.*—Torrance today covers an area of around 12,000 acres. It lies 15 miles south and east of the center of Los Angeles, between the corporate limits of Los Angeles on the north and east and the Palos Verdes estates on the south. It is 7 miles from the harbor at San Pedro. Because of its location, Torrance has been called the hub of the Los Angeles region. The industrial districts of Torrance are served by two steam railroads, the Atchison, Topeka & Santa Fe Railway and the Southern Pacific Railway, and by an electric feeder line of the Pacific Electric Railway. Along with rail facilities and a nearby harbor for importation of raw materials, the location affords such raw materials as clays and diatomaceous earth in large quantities. Tremendous natural resources of gas and oil nearby result in low-cost industrial heat. Markets for products are to be found in neighboring Western States, South America, and the Far East.

Electric power and water have been available and the supply of both these essentials will be greatly increased by the completion of Boulder Dam and the Colorado River Aqueduct. Climate and the utilization of byproducts were also factors in the choice of location, with a low raw-land cost given as a prime factor.

*The Plan.*—The rapid rise in the value of Los Angeles real estate between 1900 and 1910 was given by Mr. Torrance as the cause for the founding of this development. Prices of $2.50 per square foot, or over $100,000 an acre, led to the desire to provide a practical location for increasing industrial activity in the Los Angeles region and to establish a manufacturing district along ideal lines. Here can be seen an effort, now 20 years old, to decentralize industry. The original tract of Torrance consisted of 2,800 acres purchased for the sum of $960,000 from the Dominguez family, which had held this and other land since it was granted to Juan Jose Dominguez in 1785 by Governor Pedro Fages in the name of the King of Spain. Shortly afterwards, 730 acres additional were purchased from one of the Dominguez heirs for about $550,000. These two parcels totaling 3,530 acres and costing on an average nearly $450 per acre were planned in 1912, and by 1913 some 700 acres were subdivided and improved. With the exception of Hollywood Riviera adjacent to the ocean, only the original Torrance proper is an integrated planned unit. The balance of the incorporated area today, which includes six additions since 1921, is broken up into various uncorrelated industrial and residential tracts. The original planned area centers about the long park known as El Prado, with a railroad station at one end and the Torrance High School at the other. Business and civic buildings flank the sides of this park. Business and residential blocks on either side vary in size from 500 to 600 feet in length and from 250 to 300 feet in width. All blocks have alleys in which are placed pole and sewer lines. Industrial blocks with rail facilities are around 200 to 300 feet wide and are 1,200 to 1,300 feet long.

There are one large and eight small parks totaling about 20 acres. Active recreation is afforded by six school playgrounds and a municipal playground, totaling about 27 acres. In the Hollywood Riviera tract, there is nearly a mile of ocean beach.

Water supply has been furnished by a private company, with some industries developing their own supply. The city now has its own municipal water supply from wells, which later can be augmented by the water made available by the Colorado River Aqueduct. Community sewage is untreated and is disposed of in the ocean.

*Housing.*—Preference for lawns and shrubbery has been given as the reason for the popularity of the detached type of house in Torrance. These show Spanish influence in architectural treatment. About 70 percent of the homes are owned by men employed in the industries. Property is sold mostly on contracts payable monthly. Deed restrictions cover the type of building that may be erected. Development is further controlled by a zoning ordinance and a building code.

*Subsequent Development.*—There has been an enthusiastic leadership throughout the Torrance development, and that enthusiasm has been engendered in every activity of the city. Growth of population has been as follows:

| Year: | *Population* |
|---|---|
| 1915 | 350 |
| 1920 | 1,000 |
| 1925 | 4,392 |
| 1930 | 7,250 |

The number of manufacturing plants has increased from the original six plants established in 1912 to around 58, which produce a wide range of products. The stability of land values has been accounted for by the establishment of substantial industries. On the other hand, it is reported that protective zoning for industrial occupancy has attracted nonspeculative ownership of industrial land in large tracts. Of the area originally planned, 2,200 acres were for industry. Acreage in industrial use today is given as 4,000. There has been a steady industrial growth at Torrance with an entire absence of labor trouble.

*Community Facilities.*—Torrance schools are on a par with the standards of schools throughout the Los Angeles County school system, of which Torrance is a part. A theater, a well-equipped library which is a branch of the Los Angeles free circulating system, a hospital, and a health and welfare center are some of the community facilities afforded. Five modern community buildings have lately been completed in the civic center—a post office, city hall, police headquarters, auditorium, and library, at a total cost of $206,843.89. Federal funds have paid $52,279.10 for the post office and $54,605.00 has been granted for the others. Several other municipal buildings are planned, making "El Prado" the nucleus of a complete civic center.

On December 31, 1932, the bonded indebtedness of Torrance was $29,000. By a recent decision of the Supreme Court of California, a bond issue of $400,000 to acquire or construct a municipally owned water system was validated. This, however, is a self-liquidating project and will not increase the comparatively low municipal tax rate of 83 cents per $100 of assessed valuation. This rate does not include a county tax rate of 88 cents, a Los Angeles Free Library District tax of 4 cents, a Los Angeles School District tax of 65.2 cents, and a Sanitation District tax of 21 cents. The assessed valuation of operative and nonoperative property, including railroads, in Torrance is $21,787,-372. Operative properties (all properties such as public utilities, highway transportation companies, and other designated corporations) are taxed for the benefit of the State while nonoperative properties are taxed for the benefit of counties, school districts, and municipalities. With one exception, Torrance has the lowest municipal tax rate and interest rate on bonds of any industrial community in Los Angeles County.

**Vandergrift, Westmoreland County, Pa.**

Established in 1895 by the Vandergrift Land & Improvement Co., subsidiary of the Apollo Iron & Steel Co. The Improvement Co. has operated independently since 1900. Plant subsequently purchased by the American Sheet and Tin Plate Co. Now the Carnegie Illinois Steel Corporation, subsidiary of the United States Steel Corporation. Incorporated 1897. Population in 1910, 3,876, not including Vandergrift Heights; in 1920, 9,531 including Vandergrift Heights, annexed between 1910 and 1920; in 1930, 11,479; and in 1936, approximately 12,000. F. L. and J. C. Olmsted, town planners. Wilkins & Davison, engineers.

*Location.*—Vandergrift lies on Pennsylvania Highway Route 56 in the heart of the mountains about 32 miles, by highway, northeast of Pittsburgh on a branch line of the Pennsylvania Railroad. Originally, the steel plant was located at Apollo, a few miles south of the site of Vandergrift. The growth of the plant around 1893–94 necessitated expansion, and as land needed for this expansion was held at too high a price, the site of Vandergrift was purchased, consisting of two farms totaling 640 acres. The lay of the land, good drainage, and the presence of rail facilities were the primary factors in the selection of the site. Ground was broken for the mill on May 2, 1895, and for the town on June 4 of the same year. On June 8, lots were offered for sale to individual purchasers, and on October 29, the mill started production. In 1905, Budgett Meakin in *Model Factories and Villages* said of Vandergrift:

> * * * With the object of attracting a better class of workmen than usual, the subsidiary company formed to create the village in 1895 laid out 640 acres to the best possible advantage and offered building lots at a fair price without any restrictions, save that liquor should never be sold on it. Building lines were not even fixed, the new owners being left to decide among themselves what would best suit all in each street, thus laying the foundations of what by 1901 was a self-governing municipality of 6,000 inhabitants. The houses are detached and for the most part picturesque, without disfiguring front fences. They vary in cost from £280 to £600, so that they may well be attractive.
>
> A landscape gardener was employed to plan the wide streets, which follow the contour of the ground in graceful curves, and permit of numerous angle-plots being ornamented with shrubs and flowers. No outhouses have been allowed, and the back gates are reached by alleys running through each block, along which are laid the excellent drainage, water supply, gas fuel, and electric-light mains, connections with which were completed throughout from the first to prevent tearing up the streets. These and the alleys are paved in vitrified brick, a great advance for America. Four sites were offered for as many churches, half the stipulated minimum cost of each, £3,000, being found by the company. Everything else, including the building of houses, was left to private enterprise, and the result has been most successful, in a great measure, on account of the abundant regular work afforded by the steel mills, 80 percent of whose employees now own their houses.

Electric, water supply, and telephone plants were established by the improvement company, and all lots were sold with sewer, water, electricity, paved streets, sidewalks, and alleys installed and street trees planted. Dwellings were built by the original purchasers, however, and not by the company.

*The Plan.*—The site of Vandergrift forms a sloping promontory lying in an ox-bow of the Kiskiminetas River. The planned area was confined to an elongated tract rising from the river on the northeast to Vandergrift Heights. A high bluff dropping abruptly to the river flats marked the southern boundary of the original plan. On the north, a similar though less abrupt drop, sloping gently to the river and furnishing rail facilities, was allotted to the plant site. The street pattern was dictated almost entirely by topographical considerations and consists essentially of three sections. The business section was located opposite the railroad station site and adjacent to the plant, centered about a "village green." Forty-one lots,

20 by 120 feet, were laid out for business purposes southeast of the business district. Seven hundred and five lots with 25- to 30-foot frontage formed the second section, presumably designed for row or group housing. South and west of the business district, 376 lots with 45- to 50-foot frontage were provided, together with a large lineal park area which followed a natural ravine. Between the second and third sections, an old railroad cut was planned as a narrow park area, an overpass connecting the two sections. Thus, 1,081 residential lots were provided for an estimated population of about 5,000 persons, giving a little over *0.16 feet* of business frontage per inhabitant, if 20-foot lots only are considered as planned for business.

*Subsequent Development.*—The first two sections mentioned above represent about all of the original plan that remains intact today. This portion was developed at the time the plant was established.

The section lying between the old railroad cut and Vandergrift Heights did not develop until within the last 10 years. This fact, together with the change of owners of plant and real estate, may account for the subsequent disregard of the plan, although this could not be substantiated. Mr. J. A. Grimm, mayor of Vandergrift, stated that this area has grown up from either side toward the center. The only features which retain a suggestion of the original plan are a portion of the park area, which has been filled in, forming a level playfield without any vegetation, and a small strip to the northwest known as the "Park Plan," which may identify it with the original layout. Traces of the major street system may also be found by comparing the original and present plans. Thus, some indication is given that the original plan was not entirely disregarded, but rather changed to permit closer development and easier layout of gridiron blocks. Its inferior character in comparison with the original sections is striking. One of the interesting features of the original plan was the provision of the parkway and overpass at the old railroad cut which would have provided access to the flats below. This cut has been filled in, but still remains in park and playground use.

Although physically separated from adjacent development by topography and the river, the high eleva-

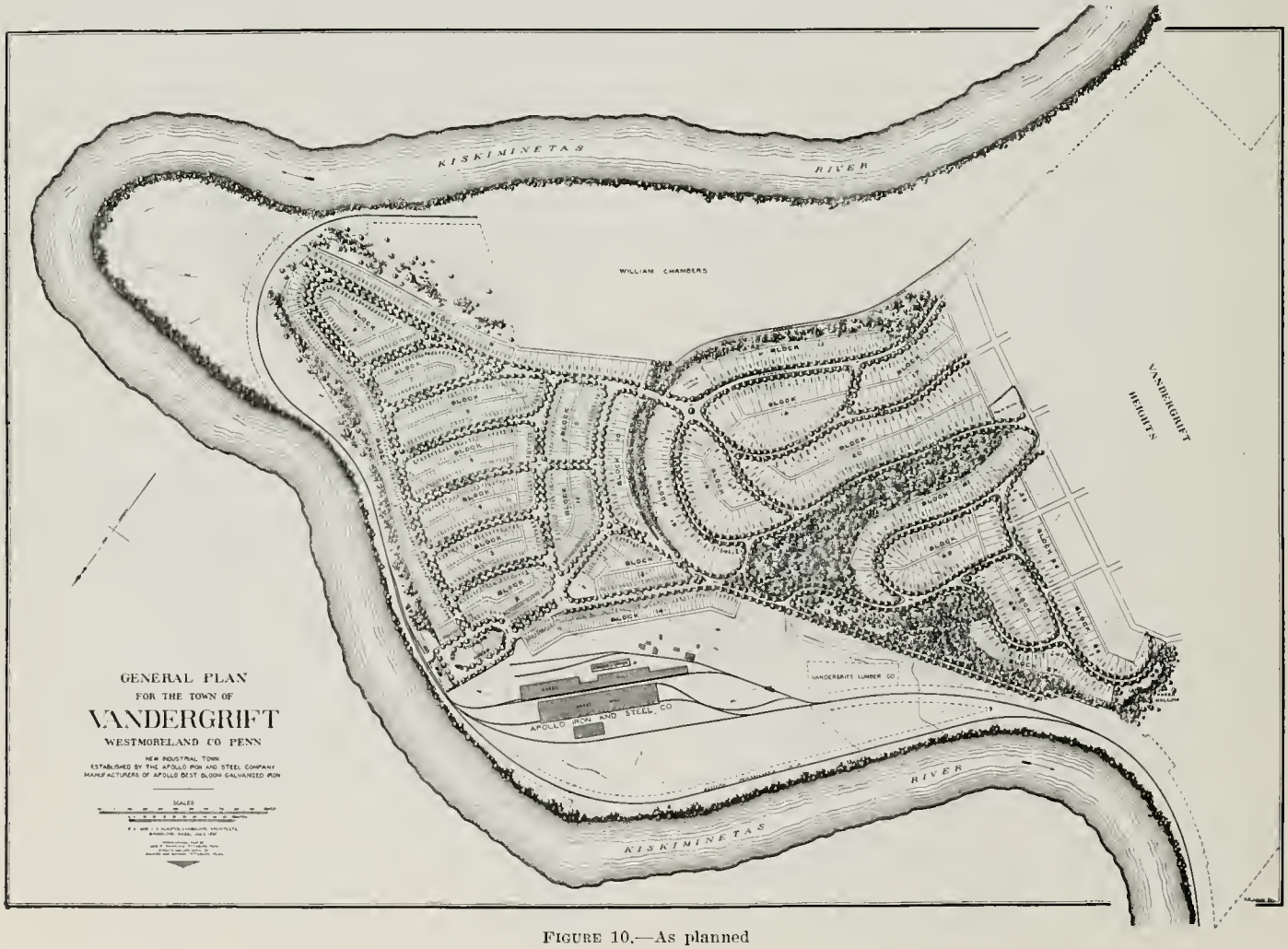



FIGURE 10.—As planned

tion permits extensive views up and down the river valley. This brings to mind the growth of the shack towns around Kingsport, Tenn., which has been repeated at Vandergrift on the flats to the south of the bluff and to the northeast across the river. When visited, these areas were just digging themselves out of the spring floods which occurred in the spring of 1936. Both areas lie outside the corporate limits of Vandergrift. They demonstrate as forcefully as do the shack towns at Kingsport the need for adequate control of the area outside the periphery of any development.

From the above discussion, it is perhaps surprising that any of the character originally planned should have survived, especially when the lack of any but an oral understanding existed between the improvement company and the purchaser regarding the type of housing, building lines, and use of property. The business section at present centers around the "Y" to the southwest of the "Green," the latter being entirely paved and used for parking. Lots on the west side of the Green are occupied by brick tenements, apparently built early in the history of the town. On Grant Avenue, running southeast from the "Y," is located the main business section, which extends for about three blocks. Thus, the business section has shifted uphill from the Green toward the residential section, leaving a tier of blocks on either side which comprise all that is left of the planned area. This has remained, with the exception of some 20 conversions, in residential use, and, surprisingly, in single-family residences on 25-foot and 30-foot lot frontages. Homes are thus left with from 1 to 3 feet of side yard, in many cases without enough room for access, painting, or repairs. It seems highly improbable that these lots could ever have been planned deliberately for single-family use. It is interesting, however, that all the houses, although of wood, are extremely well built, are of a similar appearance, and today serve the higher income group of Vandergrift. In comparison with later development, and with the Heights, this section is decidedly superior, and its use as residential area has remained relatively stable.

While detailed study would be required to determine conclusively the reasons for this stability, the following observations made within the time available should be considered. This portion of the town represents a higher percentage of home owners and of those who have maintained a continued residence in the homes probably originally built by them or their parents. Second, as the section was almost completely developed within a few years and included complete physical utilities as well as homes, and as it was built with an apparent effort at community cooperation, its character was fixed with some permanence. Third, the curving streets, splayed intersections, street grades, and especially the wooded character obtained by matured and really magnificent street trees, which represent about 45 years' growth, have been so obviously better for residence use that a change to business has not seemed reasonable. It has been suggested, however, that these very things may have caused the scattering of business conversions spoken of above rather than encouraging business to locate at some definite intersection. It should be observed, however, that with the exception of the central business district on Grant Avenue, which it must be admitted offers a more favorable location for business than the area around the Green, these businesses are small and represent the desires of the individual occupant, who also makes his home there, rather than any particular community need of business at these points. They are, however, none the less objectionable.

The case of Vandergrift is unique in that it presents a plan somewhat articulated for specific use where no restrictions have been in force. Subsequent development has shown the need for additional restrictive safeguards to protect the integrity of that use in additions to physical provisions of the plan.

A limited amount of business has also sprung up at several points at which the outside development has

VANDERGRIFT, PA.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | NUMBER OF LOTS – |
| RESIDENTIAL 50' | 68.0 | 32.2 | 50 FT. FRONTAGE - 376 |
| " -25'-30' | 49.5 | 23.4 | 25-30 - " - 705 |
| BUSINESS " -20' | 2.2 | 1.0 | 20 - - 41 |
| TOTAL | 119.7 | 56.6 | TOTAL LOTS -1122 |
| SEMI-PUBLIC AREAS | | | |
| CHURCHES | 1.4 | 0.7 | |
| TOTAL | 1.4 | 0.7 | |
| PUBLIC AREAS | | | |
| SCHOOL SITES | 0.7 | 0.3 | |
| COMMON & GREENS | 2.6 | 1.2 | |
| PARKS | 29.5 | 13.8 | |
| TOTAL | 32.8 | 15.3 | |
| STREETS | | | |
| 80 FT. WIDE | 11.8 | 5.5 | |
| 60 " " | 38.0 | 17.2 | |
| 15 - ALLEYS | 9.7 | 4.5 | |
| TOTAL | 59.5 | 27.4 | |
| GRAND TOTAL | 213.4 | 100.0 | |

ALL AREAS WERE SCALED FROM PLAN OF 1897.
THE TOTAL AREA INCLUDED THAT WHICH WAS SUBDIVIDED INTO HOUSE & BUSINESS LOTS, STREETS, CHURCH SITES & PUBLIC AREAS.
IT WAS ASSUMED THAT 20' LOTS ABOUT VILLAGE GREEN WERE FOR BUSINESS PURPOSES.
SCALE OF PLAN - 1" = 300'

Table 5.

connected with the town. The bridge connecting with East Vandergrift, instead of being located at the logical point opposite the Green, was built two blocks to the southeast, thus encouraging not only business at the intersection of Sherman and Farragut Avenues but also the movement of the central business district up Grant Avenue. The development to the south connects by a steep hillside road with the original street system at Franklin and Hamilton Avenues, two blocks east of the railroad cut, originally planned as access to this area. The influence of such connections on business location is plainly evident on Longfellow Street in the Heights, which forms the southeastern link with the development on the flats.

*Housing.*—The important aspects of housing in Vandergrift have already been discussed. Several additional points may be made, however. In spite of the high density of single-family detached houses with frame construction, the fire loss has been relatively low. This may be accounted for by the excellent construction of the houses and the use of slate roofs. Building lines of 10 to 15 feet have been consistently observed. With this shallow setback and the provision of 16-foot paved alleys and the total absence of restrictions, it is perhaps natural that alley dwellings should appear. This is particularly true along the old railroad parkway, where essentially double frontage lots occur. The same condition has also occurred on Franklin Street. For the most part, these dwellings have been well constructed and no area, either in the original section or in subsequent developments, can at present be considered a slum.

Ownership by occupant has increased from 54 percent in 1930 to about 60 percent in 1936. One half of 1 percent is still rented by the company, the remainder being rented by individual landlords. Owned homes were valued at an average of $5,794 in 1930 and $4,000 in 1936, while rentals have remained almost static. The number of residential lots appearing on table 5 refers only to those planned. In 1930 there were about 2,400 dwellings within the corporate limits, the greater majority of which are upon individual lots. Further development within the present corporate limits is, as at Fairfield, Ala., unlikely without increasing the average net density, as very few vacant lots remain. The property in the corporate limits has been "sold out," as far as the improvement company is concerned, for about 10 years. It has already been mentioned that no restrictions prevail in Vandergrift. This applies to municipal codes as well as to zoning or platting regulations, and the town operates under the State building code only. An original 99-year blanket restriction regarding sale of liquor was overriden recently by the establishment of a State liquor store.

*Appearance.*—A mental comparison of what Vandergrift might have been as planned with what it is today would entirely favor the former. However, a comparison of the section which has followed the original plan with the subsequent development is well worth study. The pleasant curvature and alinement of the contour streets and the street trees offer an example of what may still be accomplished in appearance even when other elements of the physical plan are either ignored or are not of the same excellence.

*Community Facilities.*—As Vandergrift is a somewhat isolated town, it is natural to expect rather complete community life. This life centers largely around the 10 churches and schools, including 4 grade schools, 1 high school, and 1 parochial school. It is worth noting in relation to parks and playgrounds that little or no provision was made in the original plan for active recreation in the form of athletic fields and school playgrounds, and that the subsequent development has destroyed some natural landscape park areas in order to provide the above facilities. Criticism might be made of the absence of these features in the original plan, but it should apply even more strongly to the failure of subsequent development to provide them elsewhere than in their present location. These areas are intensively used, but as located and developed, hardly add to the desirability of adjacent property, as they might have done if originally fitted to the total scheme.

*Government.*—Vandergrift is incorporated as a borough under the laws of Pennsylvania and operates under a mayor and town-council form of government.

*General Considerations.*—The self-contained character of Vandergrift is indicated by the fact that 95 percent of the wage earners live within the town, while most of the remaining 5 percent live just outside the corporate limits. An inappreciable percentage work elsewhere. In 1933–34, it was estimated that the number of wage earners was approximately 4,000. At present, this number is slightly lower. Between 2,500 and 3,000 are employed by the Carnegie Illinois Steel Co. The United Engineering & Foundry Co., occupying about 25 acres on the lowland at the extreme eastern portion of the town bordering the river, now forms an important industry and employs between 500 and 600 men. A glove factory employing about 100 women operates in the town. Employment during the depression was little below normal, and as far as is known, no labor troubles of any kind have been encountered.

Mr. Grimm said of the workability of the plan that long blocks have been found highly satisfactory and that the original underground utilities were now effectively serving a population twice as large as planned for. Water is supplied by artesian wells

located about 3 miles beyond the city limits. Mr. Grimm felt that the utilities would have been more satisfactory if they had been located in the alleys instead of in the streets. As to the alleys themselves, a desire was expressed for 20-foot widths instead of 16. Street widths have been entirely adequate except in the section of Grant Avenue, now devoted to business, which has been widened.

In the mayor's opinion, the present companies are receiving the benefits contemplated by the Apollo Iron & Steel Co. of a higher type of labor, a more stable population, and a more contented group of wage earners. The wage scale in the steel plant is the same as that prevailing in Pittsburgh, based upon the rates of the Amalgamated Association of Iron, Steel & Tin Workers. Observation of the type of persons living in Vandergrift substantiates the statement regarding the relatively high type of population prevailing, especially in the original section.

## Suburban Communities

### Goodyear Heights, Akron, Ohio

Developed 1913–1920 by the Goodyear Heights Realty Co., subsidiary of the Goodyear Tire & Rubber Co., for purchase by employees. Population in 1936, estimated at 5,700 by Akron Real Property Inventory. Warren H. Manning, town planner. Mann & McNeille, architects for allotment No. 1; George H. Schwan, architect for allotment No. 2.

*Location.*—Goodyear Heights lies in the eastern section of Akron, about 2½ miles from the central business district and within 15 minutes' walk of the Goodyear plant.

The rapid expansion of the rubber industry in Akron had caused a distinct housing shortage which led to the formation of the realty company and the development in 1913 of what is known as allotment No. 1, containing 463 lots. In 1917, allotment No. 2, adjoining the first development and at that time outside of the city limits, was developed, containing 1,500 lots. The whole community covers about 400 acres.

*The Plan.*—Allotment No. 2 occupies one of the highest elevations in Akron. A portion of the first development occupies a rather steep hillside which rises to the city reservoir, an elevation which has been given some recognition in the street layout. The second development is almost entirely of gridiron pattern. There is little in the plan to indicate an attempt at a community unit except the public square at Goodyear Avenue and Pioneer Street. However, a certain unity is obtained by the nature of the topography, which resembles Indian Hill in certain respects, in the treatment of detail, and in the partial protection of the periphery by Seiberling Field at the entrance to the Heights, and by a metropolitan park area of 40 acres on the northeast.

*Subsequent Development.*—Both allotments at Goodyear Heights are largely completed to date, about 300 lots out of the original 1,965 still remaining vacant, and 66 lots adjacent to the reservoir being purchased by the city for park purposes. Of the 10 lots originally allotted to business around the square in the first development, 9 are occupied by business structures with apartments on the second floor. Of the remaining lots around the square, 4 on Goodyear Avenue are occupied by a church, 3 by an unfinished three-story apartment house, originally started as a dormitory for women employees, 1 lot is occupied by the city, and 2 are vacant. In the second development, only 4 lots out of 11 originally alloted to business use are occupied, 2 by business and 2 by a church. According to information from the Akron City Planning Board, 22 additional lots adjacent to the original allotment and 12 on The Brooklands in the second allotment are now zoned for business use. The residential development which has taken place immediately outside its borders is of a distinctly inferior character to that provided in the Heights and has had its effect as evidenced along The Brooklands and Brittain Road, where scattered second-rate business units have located to take advantage of the restrictions prevailing in the Heights. City bus service has replaced the original street car line and operates over Goodyear Avenue and Morning View.

*Housing.*—It has been the policy of the company to sell homes to employees without profit. In order to discourage speculation, however, the house was first sold at its "real estate value" (25 percent higher) and payments for the first 5 years were based on this value. At the end of 5 years, if the purchaser still held the title and was still employed by the company, the difference between the two values plus interest was credited to his account and payments thereafter were made on the basis of actual cost. In addition, the company carried fire and tornado insurance on all homes at its own expense. The following table shows the payment method used in allotment No. 2. The first development differed from this in the price range and the amortization period, which was 15 years.

TABLE 6.—*Showing payments required on properties at values, given on the basis of 2 percent down payment*

| | | | | | | |
|---|---|---|---|---|---|---|
| Cost | $3,600.00 | $3,700.00 | $3,900.00 | $4,200.00 | $4,400.00 | $4,640.00 |
| Real estate value | $4,500.00 | $4,625.00 | $4,875.00 | $5,250.00 | $5,500.00 | $5,800.00 |
| Semimonthly payments over 20 years: | | | | | | |
| First 5 years | 17.44 | 17.92 | 18.90 | 20.35 | 21.32 | 22.48 |
| Next 5 years | 14.54 | 14.95 | 15.76 | 16.96 | 17.77 | 18.75 |
| Last 10 years | 6.44 | 6.62 | 6.98 | 7.51 | 7.87 | 8.30 |

Minimum house costs in various sections of the development in 1913 ranged from $1,800 to $2,500 and in 1917 ranged from $2,000 to $3,000. The same payment figures were also used as a basis for determining rents for those homes rented by the company, which constitute 6 percent of all the homes in the Heights.

A recent survey by the city planning board indicates that 66 percent are now owned by the occupant, and those remaining in rental are scattered among individual landlords. The percentage of home owners has been considerably reduced by the depression, as shown in the previous estimate by the company of 90 percent ownership before the planning board survey was made.

Relatively complete deed restrictions cover the community, including land use, minimum cost of house, architectural and landscape control, setback lines, porches, semi-detached housing, fences, garages and barns, easements, and control of resale as long as the mortgage is held by the company. The original restrictions in allotment No. 1 expired in 1928 and in allotment No. 2 in 1931. Previous to these dates, no change in the restrictions could be made. From these dates on, change in the restrictions in any one block can be made only by the owners holding 51 percent of the front footage on both sides of the street in any block. No conversions have occurred up to the present time in the additional area zoned by the city for business; and as the character of the community has been completely established, it is doubtful if much change will occur except on peripheral streets, where adjacent development is either in business or of an inferior character. However, this comparatively high degree of stability has been affected by factors to be discussed later.

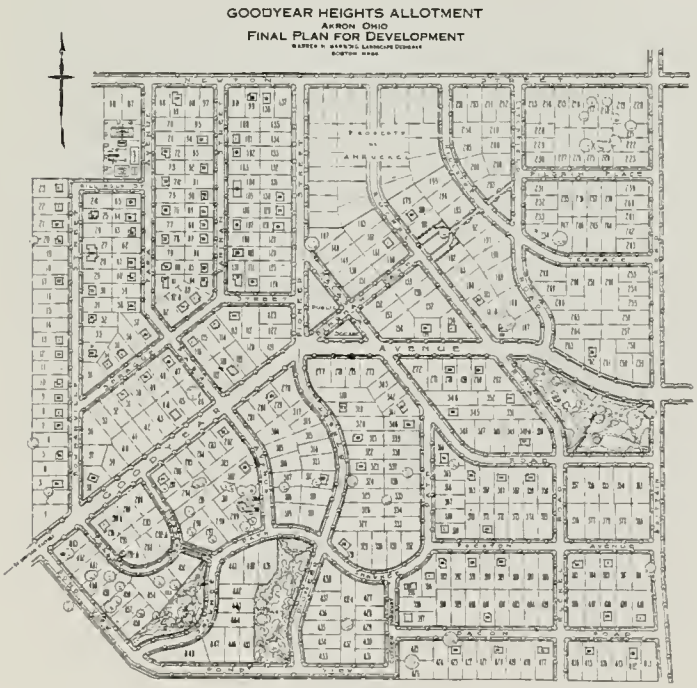



FIGURE 11

The six-room detached house has been, in the experience of the company, the most successful type for both rental and ownership. There has been during the last few years a tendency among the residents to take in roomers and double up, which, according to the company, makes the estimate of 5,700 population low. The company estimate is from 6,400 to 8,000 in the 1,600 family units. Values for houses alone are estimated to average around $3,800, with improved lots averaging $1,200.

*Appearance.*—The housing, especially in allotment No. 2, is well designed and, together with the excellent provision of street trees, forms the most distinctive quality of the community. The most objectionable feature in the entire development is the presence of telephone poles and wires on the streets. This occurred because the streets were dedicated to the city before the wiring was installed, and no agreement was reached in this respect, the city granting utility rights to the light and telephone companies.

An interesting and effective variation has been introduced into the street picture where the gridiron pattern prevails by setting back the corner houses an additional 10 feet from the front street line.

*Community Facilities.*—Seiberling Park at the entrance to the Heights provides for the active outdoor recreational activities of the employees. The Metropolitan Park area at the northeast corner of the Heights has as yet been little developed. The park adjacent to the reservoir is equipped with an excellent field house but otherwise has not yet been developed extensively. The reservoir area is covered with turf and affords an excellent view of Akron and the surrounding country but is not otherwise used for recreation. Of the five smaller park areas in the Heights, four are excellently maintained by the city and afford attractive areas for passive recreation. The fifth, an interior park, lies on a rather steep hillside at Goodyear and Tonawanda Avenues. Nothing has as yet been done to develop it as a public recreation area, probably because of its purely local character, its limited provision for access furnished by four rather narrow easements between abutting lots, and its proximity to the metropolitan park area. It is at present unused except for burning brush, etc. There are three churches within the development. The school facilities lie just outside, however; the grade school on a 10-acre site at a central point opposite the reservoir area at Brittain and Newton Streets, and the high school adjacent to Seiberling Field. Other community facilities of an indoor nature are provided in the recreation building at the plant.

*Government.*—Goodyear Heights is now entirely within the corporate limits of Akron. Aside from en-

forcing the restrictions, holding mortgages, and renting property, the company has no proprietary control in the development.

*General Considerations.*—About one-eighth of the 14,000 employees working directly or indirectly for the Goodyear Tire & Rubber Co. live in Goodyear Heights, or about 1.1 plant workers per dwelling. The average wage prevailing in the Goodyear plant is 85 cents per hour for a 36-hour week. In addition, there are about 10 percent of the wage earners living in the Heights who work elsewhere than in the Goodyear plant. The company feels that the objectives desired in establishing the Heights have been realized in providing much needed housing, free from the element of speculation, for the employees, in providing an unusually low down payment and long-term amortization, thus encouraging home ownership at a time when down payments were high and amortization periods were short; and in avoiding the suggestion of a mill village in the character of the development.

In spite of the success of these elements and of the physical quality of the Heights, the labor troubles which took place during the early part of this year have had a definite and demoralizing effect not only on the social life of the Heights but upon property values. It is understood that few of the residents were either dissatisfied with existing conditions or responsible for later outbreaks which are said by residents of the Heights to have been promoted largely by floaters and unattached men from other parts of the city. However, the movement of portions of the plant units to other sections of the country and the fact that Goodyear is the largest employer in Akron and that Akron depends for its existence upon the rubber industry have been reflected in a drop in property values, not confined to the Heights, to be sure, for which this community itself is not primarily responsible. It is to be remarked that, according to observations made by several employees living in the Heights, many of the people living there continued to work during this period. It is believed from talking with these persons that this condition resulted from the greater contentment and stability of the population of the Heights.

According to Mr. L. B. Hiebel, city planning engineer of Akron, the physical plan has been successful in respect to both use and maintenance, although fire protection and traffic are somewhat hampered by the curvilinear pattern and the necessary grades of some streets.

Some interesting cost data regarding the first development are given below:

| | |
|---|---|
| Average cost of raw land | [1] $300 |
| Lots at 4 lots per acre on raw land, value | [2] 75 |
| Raw lot and improvements, street utilities, etc | [2] 500 |

*Itemized statement*

| | |
|---|---|
| Cost of property (100 acres at $300 per acre) | $30,000.00 |
| Excavating 100,000 yards (estimated) | 27,175.00 |
| Curb for brick paving, 11,796 feet (estimated) | 3,538.00 |
| Gravel roads, 36,078 square yards (estimated) | 16,235.00 |
| Curbs and gutters for gravel roads, 35,958 feet (estimated) | 21,574.00 |
| Sanitary sewer system (estimated) | 21,000.00 |
| Storm drain system (estimated) | 8,000.00 |
| Main drain | 8,510.74 |
| Bridge (concrete) | 9,729.66 |
| Planting trees and shrubs (estimated) | 2,500.00 |
| Office and engineering expense, architects, etc. (estimated) | 21,000.00 |
| Blue pond drain | 2,932.00 |
| Instruments | 445.00 |
| Sidewalks, 265,531 feet (estimated) | 23,153.00 |
| Grading about houses, topsoil, seeding (estimated) | 13,000.00 |
| Miscellaneous (ditches, surveyors' monuments, etc.) | 1,882.60 |
| Total | 210,675.00 |
| Total number of lots | 430 |
| Average cost of lot | $489.94 |
| Range of sale price | $240–$760 |

[1] Per acre.
[2] Per lot.

Work is let to contractors in a wholesale way on large scale. An optional form of life insurance is offered to cover employees during period of payments.

**Indian Hill, Worcester, Mass.**

Founded in 1915 and developed by the Indian Hill Co., subsidiary of the Norton Company, manufacturers of abrasive machinery. Within the corporate limits of Worcester. Population in 1936, approximately 580. Grosvenor Atterbury, town planner and architect.

*Location.*—Indian Hill occupies a hillside site adjacent to, but entirely segregated from, the factory and surrounding development, and commanding a fine view of Indian Lake and the city of Worcester. It is entirely removed from through motor traffic except at the periphery. The site is conveniently located with relation to the factory, but not to transit facilities to the center of Worcester. The primary purpose in establishing Indian Hill was to encourage employee ownership of homes in the vicinity of the plant in order that both living and labor conditions might be bettered.

*The Plan.*—The hillside site necessitated an irregular street pattern, which was very successful. The southern part of the periphery at the base of the hill is separated from any possibility of adjacent development by the Boston and Maine Railroad right-of-way, Indian Lake, and areas owned by the Norton Co. and by the public. Also, the area to the north and east, including the top of the hill, is entirely owned by the company with the exception of Kendric Field, which is a city park area. Sites were provided for a community center and dining hall for employees. An approach over the railroad right-of-way was planned to enter the community center.

There is in Indian Hill the nucleus of the neighborhood unit idea, as upon its completion any future through traffic will be confined to the peripheral streets of Indian Hill Road, Ararat Street, and Stores or C Street, all of which connect with outside development. Inside these bounding streets, which surround the Hill, the nature of the topography and the present street system, forming an almost square unit of about 150 acres, are such as to discourage through traffic.

*Subsequent Development.*—Two distinct developments now exist at Indian Hill: the original community, known as Indian Hill South, and Indian Hill North, built during the war period in 1919. The original is of greater interest here, although the latter presents an interesting contrast. Of about 200 lots planned for residential use in Indian Hill South, 52 lots have been built upon. The west portion of the community, including the proposed community center and overpass, has never been developed. The development which has taken place has been strictly in accordance with the plan. Indian Hill North lies on the opposite side of the Hill from the original development and provides 94 houses, giving a total of 146 homes for the entire community at present. Indian Hill North, however, is without the interesting street plan of the south section.

*Housing.*—Homes in the south section average five to six rooms and are exceptionally well designed and built. These homes were erected at a cost ranging from $2,500 to $3,200, and sold to employees on two notes: the first for $1,000, payable in 12 months at 5 percent, and the second for the balance, payable on demand at 5 percent. Both notes were secured by purchase-money mortgages and an insurance agreement. These houses are of frame and part stucco, all with slate roofs. The homes built in the north section reflect the inflated war prices, their cost being considerably more than those in the south section, although they are smaller, consisting of five small rooms. While attractive, they are inferior to the original development. These houses were built as an emergency measure, for rent. However, the company found it desirable to sell them at a loss rather than to continue to rent them after the war. It is interesting to note their relative desirability at present, as reflected in the rents charged for the several houses still occupied by tenants. Those in the south section rent for $30 to $40, those in the north for $22. Upkeep in both sections, almost without exception, is excellent. Houses are well painted, and lawns and gardens are well kept. A good percentage of the population is of Swedish origin, which may be reflected in the excellent upkeep. An interesting condition exists in relation to the range of income groups, which includes all types of labor and earning capacity. Employees who

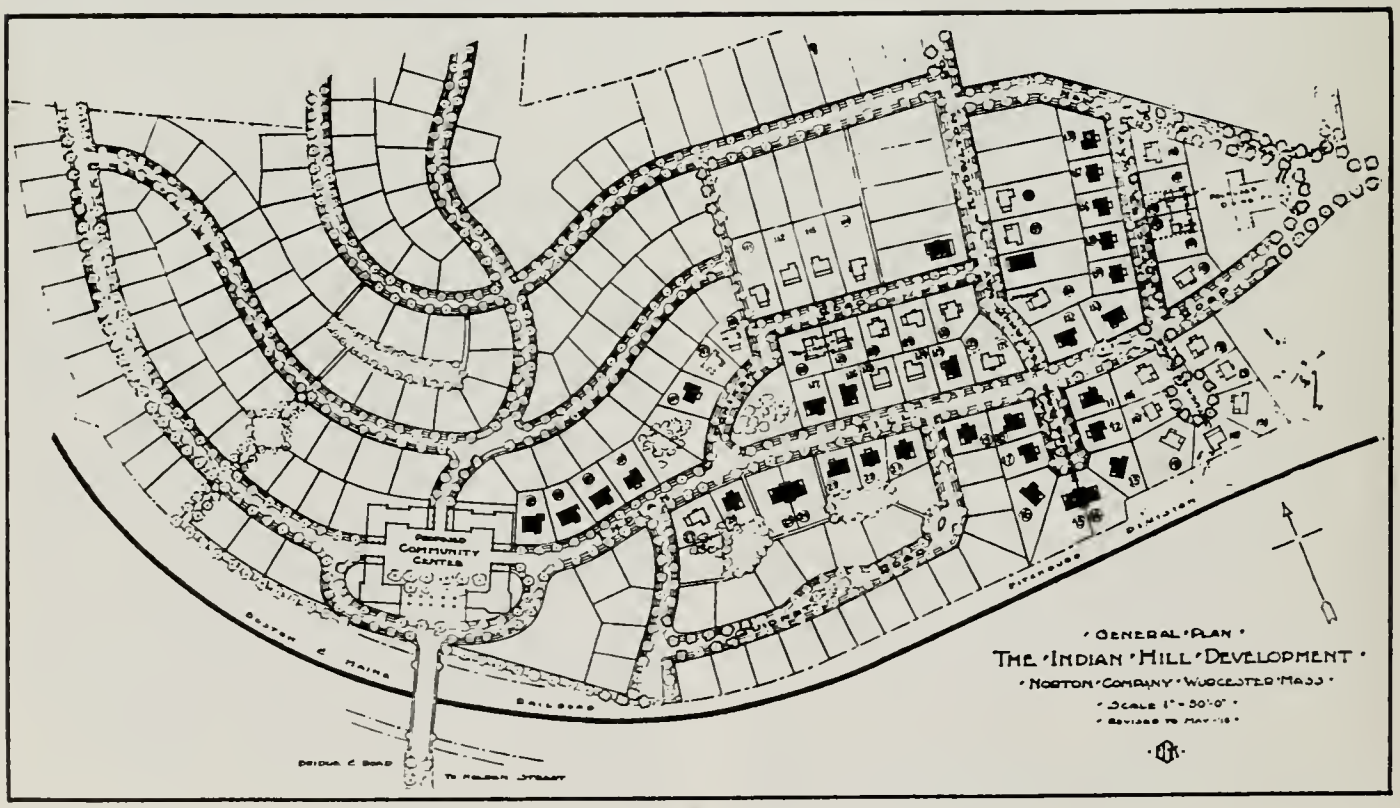



FIGURE 12.—Indian Hill South, as planned and partially developed

have come up in the company have preferred to remain in Indian Hill rather than to move elsewhere.

Because of the topographical conditions, and the fact that no garages were originally planned, group garages owned by the company have been erected. They are not, however, conveniently located with reference to the houses in the south section and are objectionably evident in the north section. This is due to lack of better available locations, since none were provided for in the original plan.

Deed restrictions covering the community control use and provide for approval or repurchase by the company of any property in case of resale.

*Appearance.*—The south section of Indian Hill contains many refinements usually found only in more expensive developments. Attractive ornamental light standards and street signs have been used. Several streets have been planted with flowering pears. Retaining walls and terraces have been utilized in handling the steeper grades in an effective manner. Boundary hedges have been used on all lots in both sections with good effect. These details, together with the attractive houses, good maintenance, and a degree of maturity, have created an excellent example of community planning, even in its incomplete state. However, the scale of the street planting should be noted. Norway Maples have been used on a number of streets. Their dense shade, combined with their close planting in the strips along the narrow roadways and their low-branching habit, have injured certain fine vistas and views, especially on Indian Hill Road, Weelahka Place, and Satucket Place. These trees now range from 6 to 10 inches in diameter and already give a somewhat "woody" appearance to the street picture. A grocery store run by private interests is operated in each section in lieu of the community center. Although these are conversions, they have been well handled under restrictions, and offer no objectionable features.

*Community Facilities.*—Indian Hill has immediately surrounding it an adequate supply of recreational and community facilities which are intensively used, especially by the younger people of the community. The company has encouraged community gardening on allotments furnished by them nearby. Those who desire gardens pay a nominal sum for plowing. A nine-hole golf course is privately operated on company land. In addition to the public athletic field, the company provides tennis courts, a hockey field, and a bathhouse on Indian Lake. A city grade school is located on Indian Hill Road, convenient to both north and south sections. A grocery store is maintained in each section, as noted above.

*Government.*—Indian Hill has no government other than that of the city of Worcester. However, although the company has disposed of all the houses except about six which it still owns, it continues to maintain the streets and furnish scavenger service. Water and fire protection are furnished by the city. Both sections lie within class "B" residential district under the Worcester zoning ordinance.

*General Considerations.*—At present, the two sections house about 5 percent of the employees of the plant, while 4 percent of the wage earners living in the community work elsewhere. The company feels that housing, together with providing and encouraging community activities, has been a good business proposition. Mr. Clifford S. Anderson, secretary of both the Indian Hill and Norton Companies, states that the ideals and objectives of the company in providing better living and working conditions, stability of land use and values, and the retention of the increment by the purchaser have been realized in all particulars; that the development has been a good influence in lowering labor turnover; and that a small financial loss has been sustained by the company in an effort to avoid a profit. Also, a small loss results from general maintenance of streets, rubbish collection, etc., which services are furnished without charge. He states that no change would be made in the physical arrangement of the plan on the basis of experience.

In answer to the query regarding change, improvement, or avoidance of certain elements in the plan, Mr. Anderson makes an interesting observation regarding the relative success of the two sections. "No change except as follows: We have two classes of houses, *one*, (south section) well built, small maintenance cost, and reasonable size; *two*, (north section) cheaper, higher maintenance cost, too small (5 rooms only). It should be noted that a number of these have been added to or converted into four rooms because of the small room size. We would only build class one houses in (the) future."

FIGURE 13.—Typical housing, Indian Hill South

# COMMUNITIES DEVELOPED BY GOVERNMENTAL AGENCIES

## War Housing—Separate Communities

### Brooklawn (Noreg Village), Camden County, N. J.

An emergency war housing town developed in 1918 by the Noreg Realty Co. for the United States Shipping Board. Incorporated under the name of Brooklawn in 1924. Population in 1936, approximately 2,000. Planned by Bissell & Sinkler, architects.

*Location.*—Brooklawn lies about 6 miles south of Camden and 8 miles from Philadelphia. It is adjacent to the Delaware River and on the main State bypass route connecting New York with the South via the Pennsville-New Castle ferry at New Castle, Del. At the time of development, the tract was entirely in farm land and completely isolated from other urban areas. During the period of the war, the town was intended for workers in the Pusey and Jones Shipyards near Gloucester, with the expectation that it would survive after the war, either as a local community or until it was absorbed by the growth of the surrounding district.

*The Plan.*—A design of a high degree of formality, which was hardly consistent with the existing conditions, was attempted in the layout of Brooklawn. The site comprised a relatively level area bounded on three sides by Timber Creek, which is a tidal estuary of the Delaware. Mount Ephraim Road, now called King's Highway, forms the southern boundary of the present corporate limits, enclosing an area of 250 acres. The site has a relatively low elevation, with a high water table which made subdrainage difficult. In addition, the area was bisected by the Woodbury and Gloucester Turnpike and by the West Jersey and Seashore Railroad, which would carry both auto and rail traffic through the center of any subsequent development. The plan, which was never completed, attempted to carry a strong architectural scheme across both the turnpike and the railroad, both of which effectively divided the site into two distinct units. From the plan, it is evident that the convenience of streets, lots, and rear service lanes was considered as secondary to the desire to create strong house groupings and axial relationships. Dead end and double service lanes were used in order not to interfere with house locations. The arrangement of the street plan suggests an attempt to adapt a scale suitable for a much larger and more monumental type of development and has introduced an intricacy of pattern not justified by either the original objective or the subsequent development.

*Subsequent Development.*—In 1923, the homes were sold at public auction to the highest bidder, and in 1924, the town was incorporated under a mayor-council form of government which took title to the streets and public areas. In the same year, the Pusey & Jones yards at Gloucester went into receivership and were abandoned, leaving Brooklawn without any supporting industry. Practically all of the homes were under mortgage to the Shipping Board at this time, and a number reverted to the Government. In 1932, the Shipping Board still held mortgages upon or held title to 350 of the 447 dwelling units originally built. In February of 1936, the Government still held 50 properties in fee simple and 50 properties upon which a mortgage still ran.

The condition just described has created a difficult problem which is just being ironed out. The town in incorporating was depending for its income upon taxes levied upon private property within its limits. However, the title to a large part of this property, until recently, was held as tax-exempt under the United States Government, which took title from the Noreg Realty Co. at the close of war operations. The town, therefore, has been trying to operate over a good portion of the last 12 years on about half of its potential tax revenues. Property still owned by the Government was rented, but no repairs were made, and no provision existed whereby this property could be disposed of except to private purchasers. During a portion of this period, tenants retained their houses rent free. During the past year, in an effort to recoup part of its lost revenue, the city endeavored to take title to this property, renovate, and either rent or sell it. Governmental difficulties for a time made this impossible, but with the coöperation of the Shipping Board, an arrangement was finally reached whereby the city has taken title to the vacant dwellings, and is rehabilitating them for rent or sale. The condition of many of these houses made them unlivable and a number had remained vacant for a considerable time. In several of the houses visited, the roofs had long been leaking, plaster had fallen, and cellars were filled with water, due to the lack of upkeep of the syphons which were made necessary by the low elevation.

The remaining vacant land within the corporate limits has also been turned over to the town. Thus, in spite of serious handicaps which have affected Brooklawn since its incorporation, the town is now in a unique position in that it not only owns a number of houses from which it may in part recoup its losses, but also holds title to most of the vacant land within its borders. Had this property previously been sold to private interests, the town would be forced to write off all the costs incurred in maintaining streets, police, fire, and scavenger service over a period of 12 years.

The physical arrangement of the town has been unfortunate in many respects. The railroad right-of-way, in addition to cutting the town in half as to use,

is partially elevated, which makes the separation visually complete. The projected grade crossing at the north end of the Woodbury and Gloucester Turnpike has been closed and would have formed, if open, a bad acute intersection. Through traffic to and from Camden follows the route of New Broadway. A pedestrian overpass is the only connection at this point between the two sections of the town. At the town center, the strong connection between the two parts of the town which might be expected from looking at the plan is, in fact, provided for only by an inadequate pedestrian underpass. The only point at which vehicular access is provided is at the State highway underpass at the south edge of the development. It is hoped, however, to obtain a vehicular underpass at some future date on the axis of the town center, in which event the railroad grade will have to be elevated still further or the street depressed.

The alley and lot arrangement are, however, the most objectionable features. The house grouping has necessitated the use of blind alleys with crooked alinement which, together with the odd-shaped blocks, has created a very uneven allotment of alley frontage to the lots, and in many cases no alley frontage at all. This makes the alleys inefficient for refuse collection, requires duplicate service both on the street and in the alley, and the awkwardness of the alleys is further increased by their use for garage entrances. Many of the lot frontages are too narrow for anything more than a gate. The turnarounds provided in dead-end alleys are hardly adequate for the turning radius of a car and are surrounded with garages, which have been difficult to relate to the alley because of the eccentric lot lines. The rigid manner in which the streets have been arranged, together with the alley treatment, has thus created an uneconomical plan in its utilization of street area and a non-functional plan in relation to the shape of blocks and the efficient utilization of lot space. In addition, it has made the arrangement of overhead wiring difficult, as regards economical erection, servicing, and appearance.

The periphery of the town is well protected by Timber Creek, which is about 200 feet wide, merging into flats on the north toward Camden, and into a wide water area and woodland on the west and south. As the town owns most of the vacant land, it is in a favorable position to protect itself against undesirable development within its limits. However, a certain

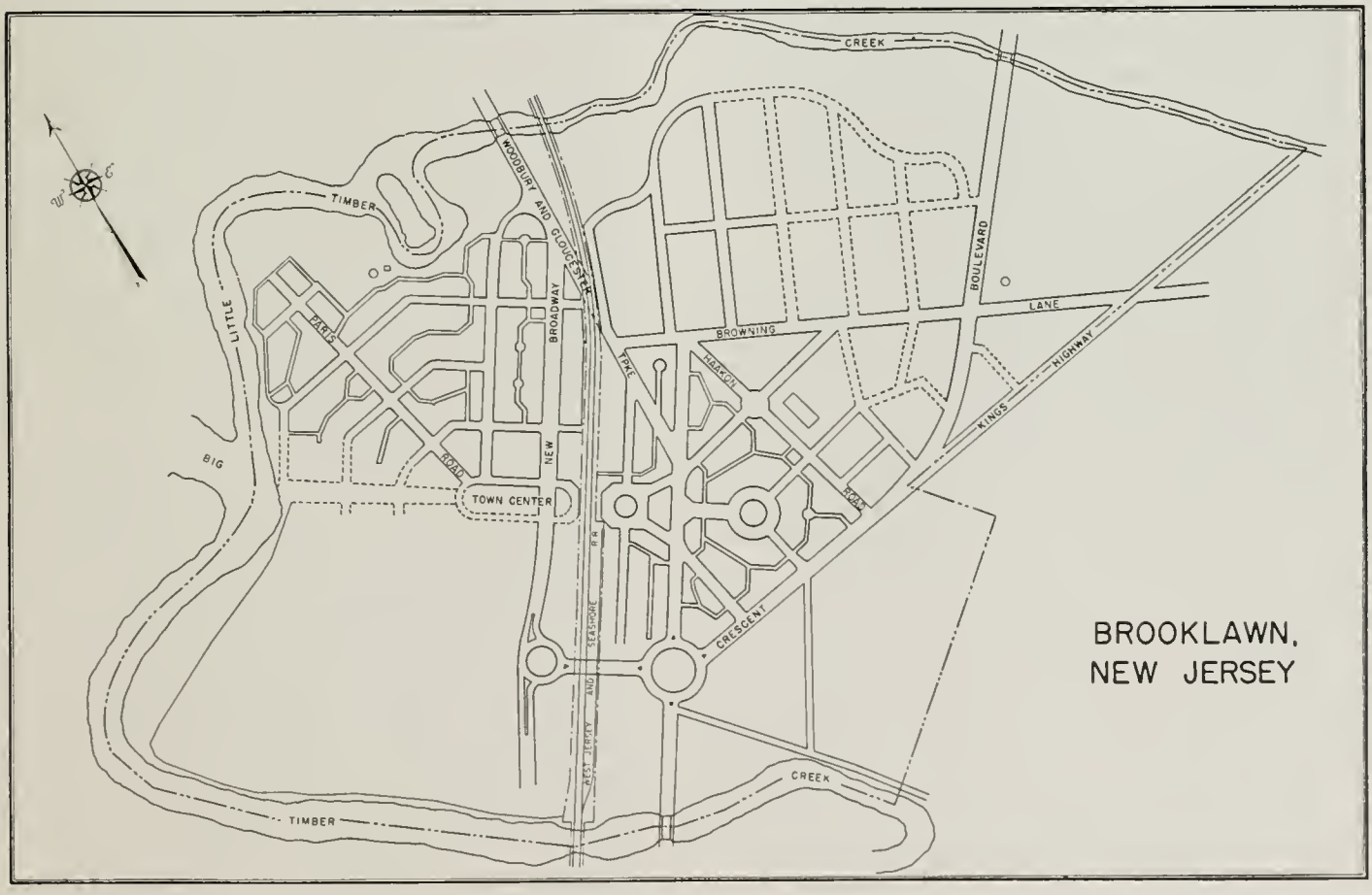



FIGURE 14.—Existing conditions

amount of substandard development has already taken place in the form of business along the Gloucester Turnpike at the north edge of the town. In the east section, adjoining Haekon Road and Browning Lane, a number of typical Philadelphia two-family houses have been built, which house a distinctly different population. This fact is definitely reflected in the decreased desirability of the original homes across the street. Timber Creek has possibilities as a recreational area, but not until adequate measures are taken to treat the sewage from Chester, Philadelphia, Camden, and points above which now creates in the creek an extremely polluted and odorous condition. The area of 50 acres in the southwest corner of the town was never completed for residence and offers the only available industrial site in the town, as it has access to deep water and direct highway connections with New York and Philadelphia, in addition to being too low for desirable residential development. The town is holding the tract in the hope that it may be able to attract some desirable industry to the site. Protection of residential development on the north should be considered, however, by providing some form of park buffer paralleling the town center.

Business in the original development is confined at present to a well-designed business group at the corner of New Broadway and the town center, and to the old administration building, which has been converted into an inn. Sporadic business groups have grown up on the Gloucester Turnpike, as already mentioned, and on Browning Lane, which forms part of the subsequent development which has taken place. No conversions have been made in the original residential section, however.

BROOKLAWN, N.J.
(NOREG VILLAGE)

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | NORMAL LOT SIZES |
| RESIDENTIAL | 52.7 | 51.7 | DETACHED – 5100 |
| BUSINESS | 1.6 | 1.5 | SEMI- " – 3400 |
| TOTALS | 54.3 | 53.2 | GROUP |
| SEMI PUBLIC AREAS | | | INNER LOTS – 1600 |
| RESERVED SPACES | 1.9 | 1.9 | OUTER " – 3400 |
| TOTALS | 1.9 | 1.9 | NUMBER OF LOTS – 650 |
| PUBLIC AREAS | | | |
| SCHOOL SITE | 1.0 | 1.0 | |
| PARK | 12.1 | 11.8 | |
| TOWN CENTER, ETC. | 1.4 | 1.4 | |
| TOTALS | 14.5 | 14.2 | |
| STREETS | | | |
| 40 TO 80 FT STREETS | 28.0 | 27.4 | |
| ALLEYS, AVE. 20 FT. | 3.3 | 3.3 | |
| TOTALS | 31.3 | 30.7 | |
| GRAND TOTAL | 102.0 | 100.0 | |

ALL DATA ABOVE OBTAINED BY SCALING PLAN.
SCALE OF PLAN: 1" = 200'

Table 7.

The original 18-foot minor streets without curbing have been found unsatisfactory both in width and in the lack of a definite boundary to the roadway, which made maintenance of gutters and park strips difficult. At the present time, Works Progress Administration labor is being used to put in curbing, the cost of materials being borne by the abutting property owner. At the same time, the roadway is being widened 2 feet.

*Housing.*—Whatever the defects of site arrangement, the housing in general has been well planned and well constructed. The majority have stucco exteriors on frame and tile construction. The housing types are about equally divided among detached, semidetached, and group. It is interesting to find that the semidetached has been most in demand because of a lower price and lower carrying charges than on the detached. This indicates the local influence of the Philadelphia row house, in that the demand for a more desirable type of house has not gone to the extent of demanding detached dwellings. A distinct preference has been shown for the five- and six-room houses as against those with four rooms; but at the present time, the housing shortage in the Philadelphia region is indicated by the insistent demand for houses of any type. Existing vacancies are few and represent houses being held for sale only. All houses have basements and are equipped with furnaces. The town owns its own water supply, while title to the sewerage system is still held by the Government. Many of the houses now owned by the town have been reserved for occupancy as soon as they can be made habitable. A realty company, known as the "Brooklawn Housing Corporation," has taken over a number of houses to sell and holds approximately 40 percent of those rented at the present time, which percentage is being gradually decreased in favor of ownership.

*Appearance.*—In spite of the strong architectural attempt which was made in house grouping and arrangement, the result is unsatisfactory, visually as well as functionally. The attempt to end street vistas with two houses placed at 45° in the middle of a block not only fails to make a group but leaves a void on the axis, and the resulting diagonal lines of the house mass produce an unpleasant and awkward effect. The small areas of lawn created by this arrangement form essentially the common front yards of the abutting houses, but are owned and maintained by the town. Being too small for play areas, they are a constant source of irritation. Semidetached dwellings at street corners are turned at 45° with the street intersection in an attempt to form a group, but fail to recognize the strong lines of the street. The design of the indi-

vidual houses is adapted to a much more informal arrangement and helps to defeat any strong effects that might otherwise have been produced. Unfortunately, catalpa trees were used in the street planting and were recently removed entirely because of their dirt and the interference of their root systems with the sewers. Consequently, a number of streets are devoid of street trees. However, the town is encouraging replanting and has already replaced many of the plantings. The absence of trees accentuates the lack of scale at the town center and the general absence of unity. The homes are, however, generally well maintained, especially in the western section of the town.

*Community Facilities.*—Brooklawn is made up almost entirely of wage earners working in widely scattered sections of Camden, Gloucester, Philadelphia, and surrounding cities. Brooklawn has thus become a dormitory community for varying types of population, without any strong feeling of community unity. A taxpayers' organization is perhaps the most active organization. However, the town maintains some excellent tennis courts which are intensively used and have been a factor in attracting a number of residents. At one time, a community association with headquarters in the old administration building was quite active, but has since disbanded through lack of support and interest. The physical plan, with its through traffic and lack of unity, has made it difficult to locate any central community activities. Churches and school are located in the east section of the town, while business and potential park areas are in the west section, neither being complete in itself, but so physically segregated as to discourage any effective unity. The town thus functions as a community only through its municipal corporation.

*Government.*—Brooklawn operates under a mayor and council form of government, which at the present time is making a determined effort to overcome the difficulties which have been considered above. The small size of the town, its lack of revenue, and difficulties of community solidarity are some of the major administrative problems with which the town is confronted. The use of land is at present governed by deed restrictions which were put on property by the Shipping Board when the town was sold in 1923, and which will expire in 1944 without provision for renewal. The town officials, however, hope to enact a zoning ordinance within the next year. A building code is already in force.

*Other Considerations.*—In spite of the faults which affect Brooklawn, a relatively stable community of owned homes is resulting. About 12.5 percent of the wage earners are unskilled workers, 40 percent skilled, 47 percent clerical, and 0.5 percent are professional men, although there is no doctor living in the town. A large percentage of the clerical group are employees of the Pennsylvania Railroad. Commuting facilities are provided by frequent bus service with reasonable fares, which puts Camden within 20 minutes, and Philadelphia within 40 minutes of the town. The present status of Brooklawn has been largely the result of an interested and conscientious administration of citizens who were elected on a part-time basis, and the realization of the residents that Brooklawn offered living conditions not to be found elsewhere in the Philadelphia region at a comparable price.

106099—40——5

**Cradock, Norfolk County, Va.**

An emergency war housing project, developed by the Department of Labor, United States Housing Corporation, in 1918 for workers in Portsmouth and the Portsmouth Navy Yard. Population in 1936, approximately 3,500. Town planners, George B. Post & Sons, United States Housing Corporation, and H. P. Kelsey. Architects, George B. Post & Sons. Engineers, Hill & Ferguson and G. C. and A. E. Wheeler.

*Location.*—The site of Cradock lies about 3½ miles south of the center of Portsmouth. This site was chosen according to the procedure and standards of the United States Housing Corporation as set forth in volume II of its final report. The area selected offered certain difficulties in construction. It was bordered on the north and east by the tidal water of Paradise Creek. The land itself was almost level, with an elevation of about 10 to 12 feet above mean low tide; and a water table ranging from the ground surface in wet weather to about 3 feet below the surface in dry weather added the problem of difficult drainage.

*The Plan.*—As originally laid out, access to the navy yard was provided by two bridges to be erected across the creek. The flat land indicated the reasonableness of a relatively formalized layout as indicated by the plan; and the topographical factors already mentioned, together with consideration of lot and block sizes, were the determining factors in the resulting layout. The area comprised 310.6 acres and was planned to house 1,235 families, with an additional 2,000 single workers to be housed in barracks. Sixty business lots were originally planned.

*Subsequent Development.*—Cradock after the war might well have become a ghost town or a decadent area; indeed, it was so for a short period. With the signing of the Armistice, construction was discontinued, leaving permanent housing for about 607 families and the townsite still incompletely laid out. With the exodus of the emergency workers, the town was practically abandoned. Light and water and gas service was discontinued. There was no special local organization formed to take over the disposition of the community, as was the case at Hilton, and it was not

until 1920 that the houses were sold. At that time, every effort was made to sell to prospective home owners and only as a last resort to speculators and development companies. The average purchase price obtained for six-room houses in Cradock at this time was around $3,400. In the same year, Norfolk County took title to the roads, parks, school, and underground utilities at a price of $5,000.

Cradock has emerged from this transition period and today is the best residential section in the Portsmouth district. Although unincorporated and under county government, it is nevertheless receiving without additional assessments all of the facilities to be found in an incorporated municipality. Streets, parkways, and other public provisions are well maintained by the county, and the town is at present largely occupied by a higher-income group of home owners employed in the navy yard, Portsmouth, and Norfolk. The Government has entirely disposed of all of the houses originally built, but still holds title to some of the vacant area in the town site. About 100 single-family houses have been built on vacant lots in the last 8 years, and at present several more are being erected. While not in architectural character with the original development, they have been substantially built, largely by home owners. Of the 60 lots reserved for business adjacent to Afton Square, 17 are occupied by business at the present time, including the 12 units originally built. Two churches occupy 11 of these lots; the fire house is located at the opposite end of the block from that shown on the plan and occupies 3 lots, and several homes occupy additional lots, the other business lots remaining vacant. No undesirable development has taken place on the farm land contiguous to the town. Paradise Creek forms an effective water barrier on the north and east, although none of the park area has been developed. The area bounded by Gilliss Road, Afton Parkway, Gilmerton Boulevard, and the Tidewater Railway has not been built up except for the triangular group of apartments, originally construction barracks, at Nicholson and Channing Streets, which have been converted into single-family dwellings by tearing down alternate units. Afton Park, covered by a beautiful stand of mature woods, forms the present southern boundary of the development, with a 300-foot width of undeveloped railroad right-of-way just beyond. Shell Road, now known as the George Washington Highway, forms the western boundary, the west side of which is occupied by a large farm in single ownership, surrounded by a high hedge. Houses abutting the highway would have been more desirable if they had been set back a greater distance from the right-of-way, as the road is a principal shore route between Norfolk and Wilmington, N. C., as well as the connection between Cradock, Portsmouth, and the navy yard. Deep Creek Oval, while undeveloped at present, has formed an effective buffer against a group of filling stations which have located outside

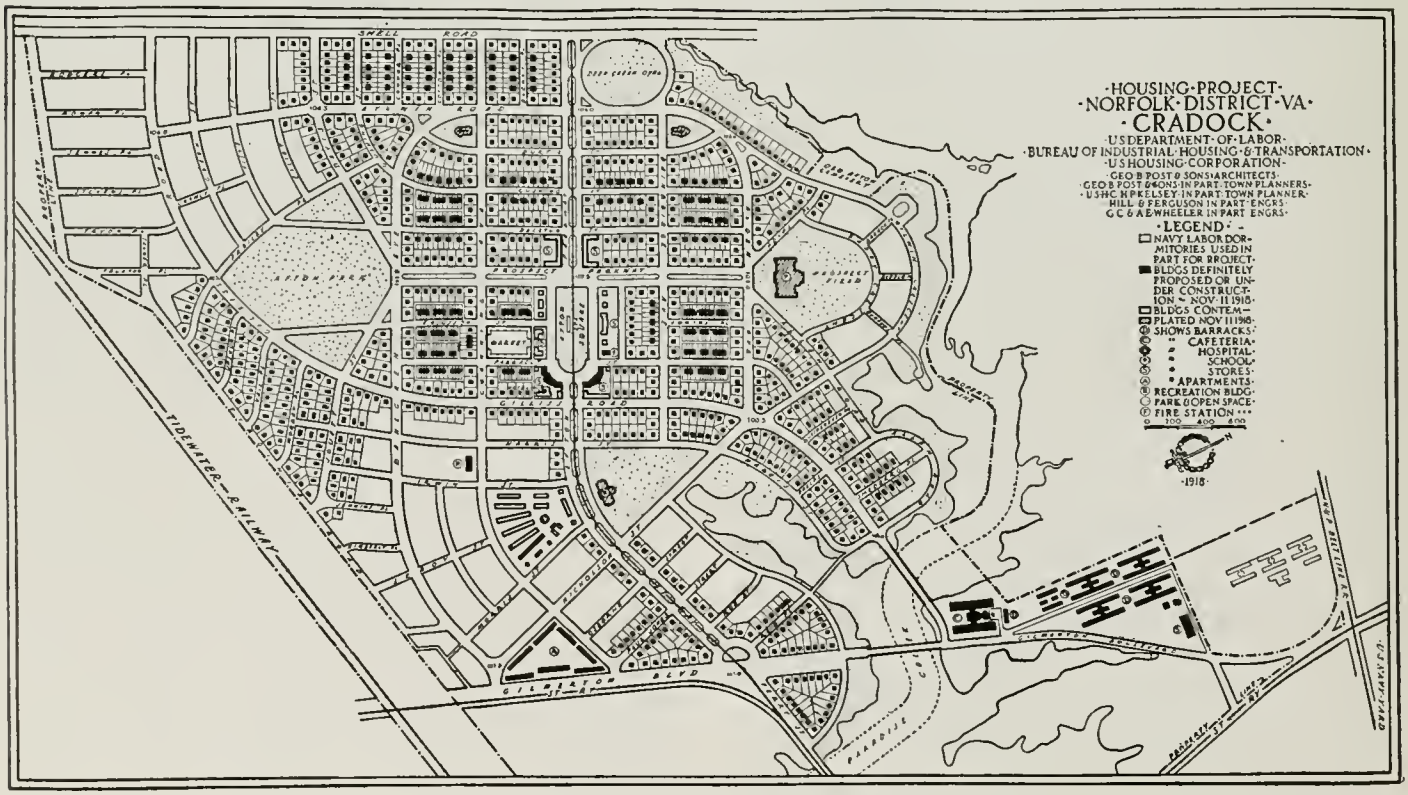



FIGURE 15.—As planned and largely developed

the property at the intersection of Bainbridge Avenue with the highway. Situated as it is, there is little probability that the problem of through traffic will ever be encountered unless Afton Boulevard is extended beyond its present limits.

*Housing.*—That good housing and good surroundings are appreciated by the population is indicated by the consistently well-maintained dwellings and well-kept yards. The dwellings are relatively large, of excellent design and good construction. All houses are of frame construction with stucco, shingle, and weather-boarding used on the exterior with equally good effect. Because of the relatively low elevation and high-water table, together with the mild climate which makes heating easy, no basements were provided. About 75 percent of the homes are heated with Arcola type heaters. Concrete foundations have been used throughout. All houses have sewer connections. Separate storm and sanitary sewers are provided. Water is furnished from the Portsmouth supply, and all houses are equipped with electricity and gas. Single-family detached dwellings are by far in the greatest demand, and conversions have been made as already indicated, which, together with later construction, have raised the percentage of single-family dwellings considerably above that originally planned. Twenty-foot setbacks, wide park strips, and 20- to 25-foot side yards between houses create an open effect and give privacy to each dwelling. Deed restrictions covering use which were imposed on the property when purchased from the Housing Corporation have expired, but no attempt has been made to convert or develop any property for business use except that originally planned for the purpose.

*Social Activities.*—Aside from the unifying influence of school and church activities, there is little organized community life for the town as a whole. The majority of residents have come from Portsmouth or Norfolk and still maintain their social connections in those cities. However, an active chamber of commerce is maintained.

*Appearance.*—As already stated, the houses and yards throughout Cradock are exceptionally well maintained. The variety of the original designs gives an individuality to each home which has been heightened through private ownership over a period of years, without destroying the harmonious effect as a whole. The inhabitants have perhaps unconsciously realized the charm to be obtained by continuing to paint their houses white, selecting various conservative tones for reroofing which largely remove the criticism made of the monotony of the original grey. They have maintained the hedges which separate the lots and add greatly to the interest of the streets. The following criticisms of the plan are included in the Housing Corporation's report: the lack of satisfactory terminations for many of the street vistas and the regularly repeated arrangement of the houses in consecutive blocks producing a series of unintentional vistas across blocks. These have largely disappeared, as anticipated, by the unusually rapid growth of the planting both on streets and yards, and the erection of garages on the rear of lots. A great number of the rear yards have been converted into well-kept flower and vegetable gardens. The high water table has apparently contributed to the substantial growth of the well-selected street trees, which contribute a feeling of maturity and stability to the well-designed and well-kept homes. Unfortunately, some of the outlying streets were not planted at the time of the original development, and subsequent plantings have not been consistently effective. On the local streets, the type of deep turf gutter, the high-crowned roadway, and the resulting open culvert made necessary at sidewalk crossings, all forced by the flat land only a few feet above tide, detract from the appearance of the streets, are a continuous source of danger for automobiles and pedestrians, and are disliked by the residents.

*Government.*—All municipal services are under the control of Norfolk County. The grade school and high school are combined in the building built by the Housing Corporation. The county school board is appointed by the State. Policing is maintained by a county officer appointed for that purpose. The fire department consists of two paid men and three trucks, augmented by a volunteer organization of residents. Fire calls average about 50 a year, 50 percent being grass fires in the vicinity.

*General Considerations.*—One of the factors which may account for the present satisfactory condition of Cradock, in addition to its physical qualities, is that apparently no speculation in real estate has taken place, due largely to the care with which the Housing Corporation has disposed of its holdings and will presumably dispose of the remaining land in its ownership. The development is, of course, the result of direct subsidy through low sales prices, particularly of the utilities. However, it does represent the type of organized community which can be established, in contrast with the indefinite extension of the typical suburb. With a 20-minute bus schedule, a fare of four trips for 25 cents, and a 15-minute run, it offers advantages in many respects which are not easily to be equalled by other areas in the vicinity.

**Hilton, Warwick County, Va.**

An emergency war housing project developed in 1918 for the United States Shipping Board for workers in the Newport News Shipbuilding & Dry Dock Co. Unincorporated. Population in 1936, approximately 1,750. Town planner, Henry V. Hubbard. Architect, Francis Y. Joannes. Sanitary engineer, Francis H. Bulot.

*Location.*—Hilton, now known as Hilton Village, is located on the east bank of the James River about 3 miles north of Newport News on the main highway between Newport News and Richmond, Va., and about 2 miles north of the shipyards. This location was selected by the shipbuilding company with the approval of the designers as the best available site, considering price, size, ease of development, and accessibility. It is interesting to note that the shipbuilding company began its interest in Hilton in 1917 by preparing a scheme that could be put into execution as soon as the anticipated Government appropriations were made available for emergency war housing. At the time Hilton was taken over by the Shipping Board, complete plans had been prepared. Consequently, it is one of the earliest of the war housing developments to get under way and subsequently one of those almost completely developed.

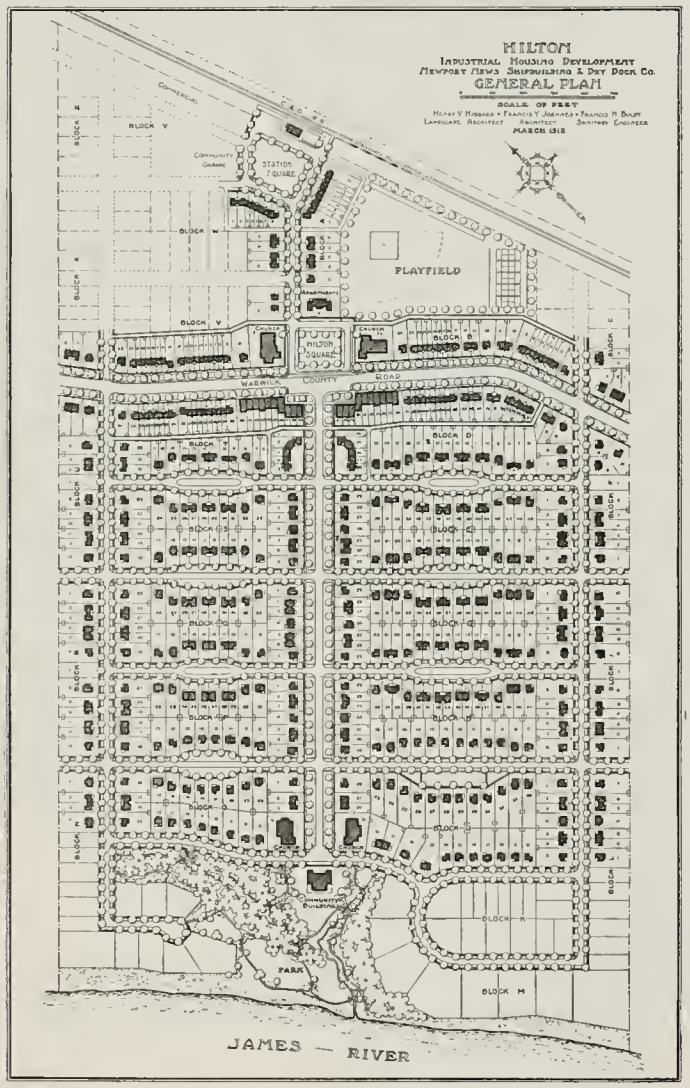



FIGURE 16.—As planned and largely developed

*The Plan.*—The town-site includes a rectangular area of about 100 acres lying between the Chesapeake & Ohio Railroad right-of-way and the bluffs of the James River. The plan, dictated largely by the almost absolutely level topography and the boundaries of the site, has a strong formal feeling, depending on architectural grouping and axial treatment for its effect. It consists essentially of a strong central axial parkway running from the business square on the main highway to the community center on the bank of the river, two flanking streets parallel to the side boundaries, and five cross streets, four of which have, on each side of the central parkway, a grouping of buildings about a slight enlargement of the street right-of-way. Five hundred and twelve dwelling units and one apartment house were planned for immediate development, and additional sites were set aside for the future development of about 85 larger homes. Two business groups of 10 stores each were planned at the main entrance. A railroad station was provided for, and sites for 4 churches and a school and community building were laid out.

*Subsequent Development.*—Unlike Cradock, Hilton did not have the disadvantage of being left without the supervision of some agency interested in its welfare. At the close of the war, the Newport News Land Corporation, a subsidiary of the ship-building company, was formed to take over the development and continue it for their employees, the final purchase being effected in 1922. Thus, the interest taken by the company relieved, to a great extent, the transition period which affected Cradock. Since 1922, the land company has followed the policy of selling to employees and others wishing to live in the community.

At the time Hilton was purchased by the land company, 473 dwelling units had been erected and the area west of the highway practically completed, including the school and community building. The apartment house and the development adjacent to and including the railroad station were never carried out. However, all the originally planned area has closely followed the plan in detail. No subsequent development has taken place around Hilton Village. The company holds title to farm land on either side of the village, while 18 acres of park and school area are held by the county.

*Housing.*—House designs were studied on the basis of the existing needs and preferences of the workers and range from four to eight rooms, with six rooms as an average. Being near the source of lumber, frame construction was used entirely, with a large number of stucco exteriors, all being roofed with slate. Basements were not provided, but about 30 have been dug subsequently by private owners. The preference for

single-family dwellings has been expressed, as at Cradock, to the extent of converting a number of two-family units into single-family dwellings. In addition, the group houses to the left of the entrance have been converted into an inn, leaving 457 units out of the original 473. Ten additional houses have been built on vacant lots in the last 4 years.

The use of a large percentage of semidetached types and the utilization of varied setbacks have made it possible to secure more light and air, and wider side yards on relatively narrow lots. The prevalence of the automobile is indicated by the number of garages that have been constructed. The absence of alleys has brought the private driveways in from the street through the relatively narrow side yards. However, the land company has considered the absence of alleys as one of the best features of the plan. As at Cradock, a distinct preference for detached one-family houses was indicated by their more rapid sale to occupant owners. The four-room houses have been the last to sell but have made fairly successful rental units. Little difference was found in the rental demand. Criticism was expressed at the time of the war in regard to insufficient head room in the stair wells in the houses, which made it impossible to move large pieces of bedroom furniture to the second floor.

At the present time, the land company has disposed of 388 dwelling units out of the total of 457, of which 363 are owned by the occupant, leaving only 69 units still in the hands of the company. It is of interest that, while in 1924 a 53-percent vacancy existed at Hilton, at the present time the general housing shortage is indicated by a waiting list of about 50 families desiring to rent. Ninety percent of the residents now living in Hilton are employees of the shipyard.

*Appearance.*—Hilton has depended largely on strong axial relationships and architectural treatment for its effects. Main Street, in the original design, depended upon the school at one end of its axis, and the apartment house at the other for its terminating features. Both are disappointing, not through faulty layout but because the buildings originally designed were not erected. The present school of red brick and uncertain design terminates the vista, but fails to produce the mass or the interest which was contemplated by the colonial structure originally proposed. The site of the apartment house is now occupied by group garages which serve the inn. Although a laudable attempt to end the vista has been made by a well-designed facade facing the highway, its function has not permitted the larger scale needed to form a satisfactory terminus.

The houses, however, are well designed and are excellently maintained. Their strong architectural grouping adds to their effectiveness. Special attention was given to the design of corner houses in order to adapt them more fully to their site. One criticism of this grouping is the lack of strength in the appearance of the setbacks on the minor streets. This is largely due to the arrangement of street trees which parallel the roadway through the open spaces instead of following the setback of the house facades and sidewalks as was originally planned.

In the upkeep of the dwellings and yards fronting on the highway, the combined effect of through traffic, street-car line, row-house type, small number of rooms, and proximity to business is reflected. Elsewhere, homes and grounds have been well maintained, giving the impression of housing a relatively higher income group than is actually the case. The street planting consists largely of European planes, and is highly effective. However, preference for elms was expressed by the land company, which objected to the planes because of their shedding habits.

*Community Facilities*—Although smaller than Cradock, there is evidence of a stronger community spirit in the presence of a civic league, men's and women's clubs, and a tennis association. The school and community house and four churches form the center for these activities. High school facilities lie outside the village. This greater community solidarity may be accounted for by the greater ease with which Hilton passed through the post-war period, the fact that 90 percent of the wage earners are employed in the same plant, and the fact that Hilton is somewhat more isolated from the metropolitan center of the Norfolk district than Cradock, depending on rather inadequate street-car service for its connection.

*Government.*—As at Cradock, the county is the governmental unit under which Hilton operates. However, the land company still retains a degree of control. Additional deed restrictions have been applied governing the erection of garages and house additions as well as land use, which will run with the land until such time as the village incorporates or is taken into the corporate limits of Newport News.

FIGURE 17. Typical street, Hilton, Va.

*Other Considerations.*—Many of the advantages to be found in Hilton are, as in Cradock, the result of what amounts to an indirect Government subsidy. That is, the utilities and the houses are now being run on the basis of a valuation less than their actual cost to the Government. Of course, some mark-down of this kind was contemplated from the beginning as part of the cost of the war to the country. Not in many cases, however, was the Government's loss so much the community's gain. This has aided the land company to make the development a financial success for a much lower wage group than might otherwise have been possible. However, the company carried as high as $900,000 in mortgages for a considerable period, most of which have now been liquidated. The significance in both Hilton and Cradock is the distinct appreciation in value which has taken place since the war without the stimulus of subsequent growth either within themselves, or within the Norfolk district, which lost almost 25,000 inhabitants between 1920 and 1930. Both towns represent the most desirable living conditions for their price to be found in the Norfolk district.

**Yorkship Village, Now Known as the Fairview Section of Camden, N. J.**

An emergency war housing project established in 1918 for employees and developed for the United States Shipping Board by the Fairview Realty Co., subsidiary of the New York Shipbuilding Corporation. Population in 1936, approximately 6,500. Electus D. Litchfield, town planner and architect. Lockwood, Greene & Co., engineers.

*Location.*—At the beginning of the war, the shipyards at Camden were found to be among the best equipped to meet the demand of the emergency shipbuilding program. Orders to double output facilities resulted in the need for housing a large number of employees.

The shipbuilding corporation owned the land. The Fairview Realty Co., created as a subsidiary, was then formed and capitalized at $250,000 with its income limited to 5 percent or $12,500. Ten million dollars were set aside by the Government for the construction of the town and all returns over and above its amortization (5 percent interest+3 percent repayment on principal per year) plus the $12,500 return on the capital investment were to go back into the maintenance of the town. The Government held a mortgage as a first lien over the development, while the active care and responsibility for construction and immediate administration were vested in the realty company. Provision was made for the Government to readjust rents and sale prices within 2 years after the war to absorb the excess cost, up to 30 percent shrinkage, due to war conditions. The proceeds of houses sold to individuals were to be credited as part of the amortization charges.

A site of about 225 acres, bordered on the north, west, and south by salt marshes and streams, on the east by the Mount Ephraim Pike, and about a mile southeast from the plant, was selected for development. The area was relatively level with an elevation above high tide of between 10 and 20 feet, and bounded by relatively steep banks rising from the water areas. Thus, except for the eastern boundary, the area was segregated from other developments, and its periphery was protected.

*The Plan.*—A highly formalized and symmetrical plan was evolved for the community, which fitted well with both the relatively level topography and the type of housing. The street pattern approaches to some extent a theoretical pattern of radial and circumferential thoroughfares, centering upon a business square. Access to the plant and Camden was provided at the extreme north portion of the plan by bridging the branch of Newton Creek. Mount Ephraim Pike also formed a direct route to Camden. A street car connection was planned to follow the east and west route of Collings Road, which was to furnish direct connections with the shipyards and Gloucester. Provisions for stores and apartments about the square and for a community building, church, and school sites to form a self-contained community were made in keeping with the nature and location of the site. Originally, the plan extended only to Merrimac and Collings Roads. Later plans were drawn up for the section between Merrimac Road and Mount Ephraim Pike which was constructed, and for the area south of Collings Road, a portion of which was never developed. The later plan may be identified by the concentric circular street pattern.

*Subsequent Development.*—As in the majority of the Shipping Board projects, the stock in the Fairview Realty Co. and all the records in connection therewith were disposed of by the company to the Shipping Board, and the town was sold at auction by the Government in December 1922. At that time, 1,438 residential units had been constructed, according to the auction map, of which 1,021 were row-house units, 300 were semidetached, 61 were detached, and 56 were apartment units. In addition, eight store units on Collings Road and two at Yorkship Square were sold, as well as offices, lodge rooms at the square, and the gymnasium and garage. The school had been taken over by the city, and the church by its congregation. Vacancies were left on the site planned for the community building, for the group of stores on the south side of the square, for the stores at the north end of Yorkship Avenue (the main entrance), in the area south of Collings Road, and on various lots near the periphery. The following is an extract from the deed under which the property was sold:

*To have and to hold* the said premises, with all and singular the appurtenances, unto the said party of the second part, heirs and assigns to the only proper use, benefit and behoof of the said party of the second part, * * *.

*Under and subject*, however, to the following restrictions, covenants and conditions, to be strictly observed by the party of the second part herein * * * to wit;

That the grantee herein * * * shall not erect, build, or maintain, or cause or permit to be erected, built, or maintained, upon said premises, or any part thereof, any blacksmith, currier or machine shop, piggery, slaughterhouse, public or livery stable, soap, glue, or starch manufactory, or any trade or business or factory of any kind or nature whatever, and that any part and all of said property is to be strictly used for residential purposes only; *Excepting, however*, All that property situated on Yorkship Square and on the south side of Collings Road from a point opposite East Ironsides Road running east to Alabama Road and along the southwest side of Alabama Road from Collings Road to Merrimac Road, can be used for the carrying on of trade or business not dangerous, noxious, or offensive to neighboring inhabitants or property or any trade or business likely not to depreciate property values in the immediate vicinity within keeping with the general character of the neighborhood. This covenant is to be construed as running with the land.

Herein lies the greatest failure in the well-conceived and executed scheme of Yorkship Village. No restrictions were imposed that subsequent development on vacant sites should be in keeping with the character already established. Had these vacant areas occurred only at the periphery, the subsequent results would not have been quite so disastrous, but a glance at the illustrations of subsequent development will indicate the results better than words. This condition as well as that occurring on Mount Ephraim Pike will be discussed at length in section 3.

At the present time, all land below mean high tide is held by the city of Camden, while land to the northeast of the community adjacent to the pike and also south of Collings Road is still held by the New York Shipbuilding Corporation. A small area containing the old gymnasium, used originally for a moving pic-

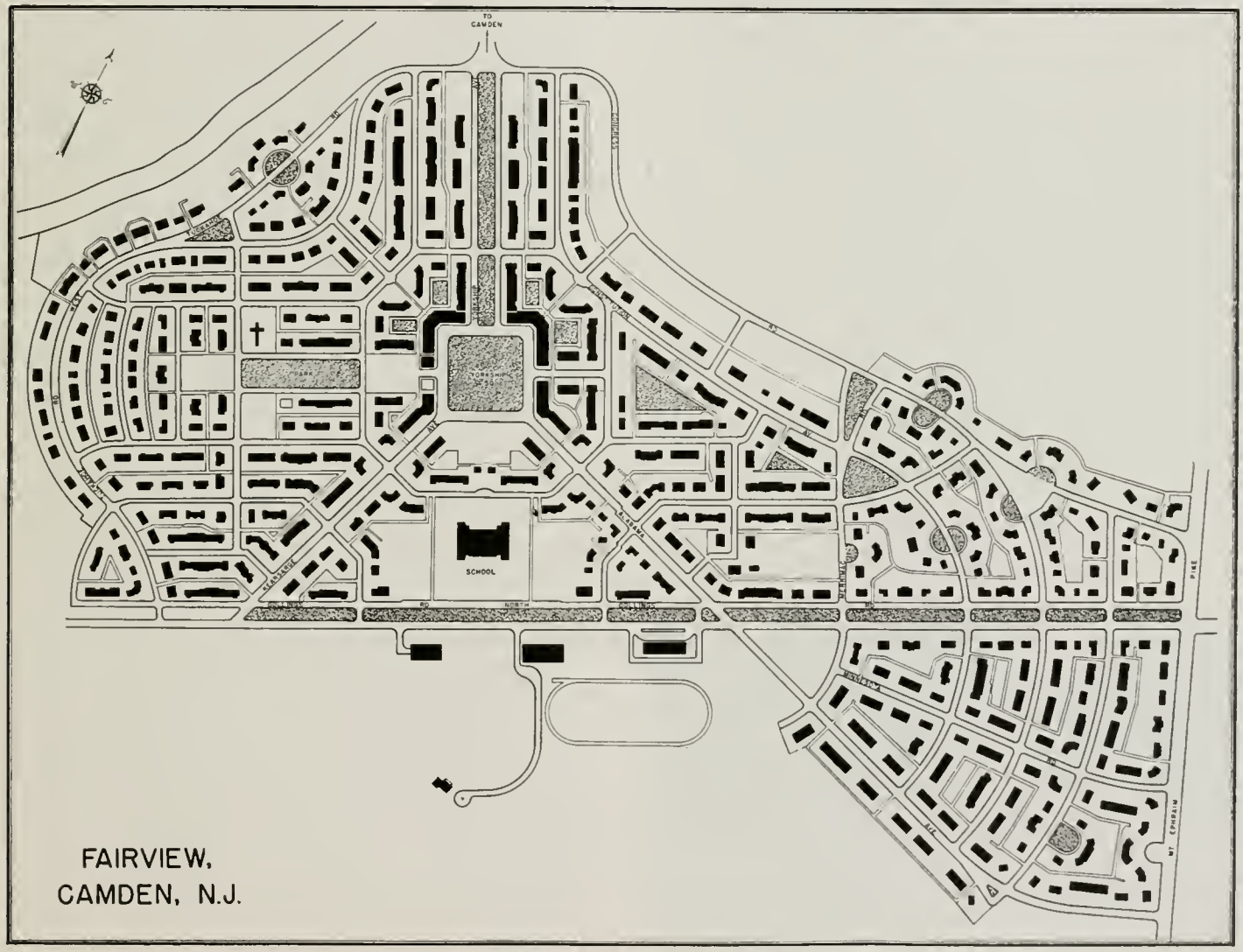



FIGURE 18.—Conditions existing in 1922

ture theater, and the athletic field are now owned by a private athletic club. At the southwest corner of the community, a major traffic intersection has been created on Mount Ephraim Pike by the construction of Crescent Boulevard.

*Housing.*—It should be noted that 71 percent of the housing units in Yorkship are of row type. This was predicated upon the idea of economy and of following the native Philadelphia and New Jersey tradition in type as well as in architectural style. Lots were planned only 70 feet deep in order to avoid "untidiness and squalor," permitting only space enough for drying yards. The erection of garages on many of the lots has destroyed this function and crowded the garage within a few feet of both the house and the alley, as rear yards range from 27 to 33 feet deep. Lot frontages for row houses vary from 14 feet to 18 feet for interior units, and from 30 to 45 feet for end units. The number of rooms for all types of housing ranges from four to seven, with several eight-room units, the average being slightly over five. In 1918 the average estimated cost for houses was $2,700. From observations on the ground, it is estimated that around 200 additional dwelling units have been built since the war, both on existing sites within the community and on new streets, unrelated to the original development, at the northern and southern periphery, which with apartment units give a total of between 1,600 and 1,700 dwelling units at present. Of these, 600 units are rented by several realty companies. Values of owned homes range from $1,800 for the four-room units to $3,600 and $3,750 for the six-room detached unit, with $2,800 as an average. The estimated cost of homes and improvements in 1918 was $3,150. Those units owned by the several realty companies rent for a slightly higher figure than those individually rented, the former ranging from $22 to $35, with an average of $28, the latter averaging about $24. Various other aspects of the housing at Yorkship Village are discussed at length in section 3. It should be noted that Camden has no zoning ordinance.

FIGURE 19.—Public area, Yorkship Village

YORKSHIP VILLAGE
FAIRVIEW SECTION, CAMDEN, N.J.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | |
| RESIDENTIAL | 80.4 | 44.9 | AVE. LOT AREA - 2526 SQ. FT. |
| SPECIAL BLDGS. | 1.8 | 1.0 | - .17 ACRES |
| TOTAL | 82.2 | 45.9 | DENSITY PER ACRE - NET |
| | | | 16.45 DWELLINGS |
| PUBLIC AREAS | | | DENSITY PER ACRE-GROSS- |
| SCHOOLS - PARKS - ETC | 35.6 | 19.8 | |
| TOTAL | 35.6 | 19.8 | 7.8 DWELLINGS |
| STREETS | | | STREET LENGTHS- |
| 50' STREETS | 33.8 | 18.9 | 50' STREETS - 5.6 MILES |
| 62' " | 7.4 | 4.2 | 62' " 1.0 " |
| 124' " | 14.0 | 7.9 | 124' " .9 " |
| 10' ALLEYS | 6.1 | 3.3 | 10' ALLEYS - 5.1 " |
| TOTAL | 61.3 | 34.3 | |
| GRAND TOTAL | 179.1 | 100.0 | |

LENGTH & AREA IN STREETS - OBTAINED BY SCALING MAP
SCALE OF MAP: 1" = 140'

Table 8.

*Appearance.*—It may be a platitude to state that the more distinctive and unique the layout and architecture of a community, the less is required to throw the whole composition off balance, thus obtaining not only a less pleasing result by the introduction of incongruous elements but an actual shock and disappointment to the observer when the promise of a culminating feature or a harmonious pattern is suddenly dissipated. This is forcibly illustrated by such structures as have been subsequently "dumped" on the vacant areas at Yorkship Village. It brings home with renewed force the great desirability of a continuing agency to function not only actively during the formative stage of a development but defensively and in adaptation during the subsequent periods of its life.

An element of public maintenance may well be mentioned here, as it affects directly the appearance as well as the cost of park and parkway upkeep. Although there are about 36 acres of public open space, they are in about 48 separate and distinct parcels of park, parkway, and playground, varying in size from that of a front yard to that of the school grounds. They are relatively well maintained by the city, but many of them are not functionally arranged for any use or are used for some unintended purpose. Cases in point are the interior playground areas, especially those adjacent to the square. The shallow lots have largely prevented the erection of garages here, and these areas have been used for car storage at night and playgrounds during the day, with the result that they are serving neither purpose satisfactorily.

Yorkship is a good place to observe what a well-designed community might have looked like with proper care. It has a charm which the general lack of mainte-

nance of homes and yards and the intrusion of architectural monstrosities have not entirely destroyed.

*Community Facilities.*—It was the opinion of a person who has been on the ground at Yorkship since its inception and knew of the hopes and desires of its designers, that the community facilities provided have failed in their purpose, primarily because of the type of population. The people resent any personal interference or attempts at social cooperation by others, and are not sufficiently capable of organizing themselves. This is, in his opinion, further affected by the adoption of the small-house unit, as discussed in section 3. The interior playgrounds have already been mentioned. The physical facilities of the grade school are adequate but bear additional evidence of the type of population. High school facilities lie outside of the village. The athletic field and gymnasium have already been noted as in private ownership. A new playground area, with wading pool and other facilities, is now being completed on city property along Congress Road. There are three churches in the village, including one built during the war, and one parochial school.

*General Considerations.*—The wage earners at Yorkship work in various plants in Camden and Philadelphia as well as at the shipyards. The 1936 assessed valuation of the 14th Ward of Camden, based on 100 percent of fair market value, is $9,043,720, 75 percent of which constitutes the village, thus giving it an assessed valuation of about $6,783,000.

## War Housing—Suburban Communities

### Union Park Gardens, Wilmington, Del.

Established in 1918 and developed by the Liberty Land Co. for the United States Shipping Board, Emergency Fleet Corporation. Population in 1936, approximately 2,600. John Nolen, town planner; Ballinger & Perrot, architects.

Union Park Gardens is one of the most consistently successful of the suburban areas visited. With the shortage of housing in 1918 caused by the increase in the production of war materials at the Pusey & Jones Shipyards, the Harlan plant of the Bethlehem Shipbuilding Corporation, and the American Car & Foundry Co., the Wilmington Chamber of Commerce organized the Wilmington Housing Co., a holding company, which raised capital for the purchase of land for housing purposes. An operating company known as the Liberty Land Co. was then formed to purchase the land and take charge of construction operations. The land was then given to the Government, upon which the Government made a loan for the construction of houses and took a mortgage from the Liberty Land Co. to cover the construction costs, which mortgage paid 5 percent per annum, with any unexpended balance to be used toward amortization of the principal.

*Location.*—The site, comprising about 58 acres of rolling farm land, was chosen for the following reasons:

1. The land needed was in the ownership of only two parties.
2. It was offered at a reasonable figure.
3. With the exception of one section, trunk sewers were already constructed to the site.
4. The topography of the site required little additional grading.
5. The shipyards could be reached in 10 minutes by two different trolley connections.

The site was located at the intersection of Union Street and Lancaster Avenue, near the corporate limits of Wilmington.

*The Plan.*—The area was fortunately situated with relation to adjacent development, which will be considered in detail in section 3. In addition, enough property was purchased to permit development on both sides of Union Street. Provisions were made for a community building, school, and stores in an effort to create a small community unit. Grant Street, forming part of the Wilmington park system, was continued to connect with the city park area to the south, and it was planned to preserve a small natural stream running the length of the site. It is questionable if the school site was entirely well located, although it was segregated from possible through traffic. Alleys were avoided, front areaways being preferred. However, provisions were made for group garages in several places.

*Subsequent Development.*—Five hundred and six dwelling units were erected, 399 of which were group type, 104 semidetached, and 3 detached units. There is, in addition, a six-family apartment house. In 1922, the property was sold by the Government, bringing a total of $1,575,507 in comparison with $2,500,000 appropriated for development in 1918. An interesting variation here was the disposition of the property to one buyer. Provision was made that the tenant

FIGURE 20.—Typical street as seen from City Park, Union Park Gardens

at the time of sale had 30 days in which to purchase from the buyer at an increase of 25 percent over the auction price. Many tenants took advantage of this provision. After the original sale, house values appreciated as much as 200 percent above the purchase price, and many sold up to $6,000, the original sale price averaging a little over $3,000 per unit. Mr. Clifford of the Wilmington assessor's office stated that their present value is about $4,000 per unit. Housing is now owned and rented by a higher income group than was originally planned for.

Although the housing has been completed according to plan, the school and playground site, the community building, and the store group across Lancaster Avenue have not been developed. In 1923, 22 row units, and in 1928, 4 additional units were built on the school site, much to the detriment of adjacent property and the appearance of the street generally. The site for the community building has, however, remained vacant. Under the Wilmington zoning ordinance, it is zoned for residence, and although pressure has been brought to bear to permit business, it has been so far successfully resisted by residents, some of whom hope to have a branch library located there. Sufficient business has developed along Union Street, in addition to that provided for the Gardens, to meet the demand adequately. The store site is now occupied by a filling station. Only 6 units of the original store group on Union Street were erected, 7 having been erected on adjacent lots by private interests.

UNION PARK GARDENS
WILMINGTON, DEL.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | RESIDENTIAL LOTS - 514 (40 APARTMENT UNITS ON 8 LOTS) |
| RESIDENTIAL | 32.14 | 55.4 | |
| APARTMENTS A-B-C | 2.86 | 4.9 | |
| TOTAL | 35.00 | 60.3 | TOTAL UNITS - 554 |
| SEMI-PUBLIC AREAS | | | HOUSES PER NET ACRE - 16.0 |
| RESERVED SPACES | .90 | 1.55 | FAMILIES - " " - 15.8 |
| TOTAL | .90 | 1.55 | AVE. LOT AREA - .062 |
| PUBLIC AREAS | | | NORMAL LOT SIZE - |
| SCHOOLS & PLAYGRS | 2.10 | 3.62 | DETACHED - 50' x 100' |
| COMMUNITY BLDGS. | 1.07 | 1.84 | SEMI- " - 45' x 100' |
| PARKS | 4.49 | 1.74 | GROUP - 16'-18'-20' x 100' |
| TOTAL | 7.66 | 13.20 | |
| STREETS | | | STREET LENGTH |
| 60-80 FT. WIDE | 2.05 | 3.53 | MAIN - 0.63 MILES |
| 40-50 " " | 9.22 | 15.90 | LOCAL - 1.67 " |
| PARKWAY | 3.17 | 5.46 | PARKWAY " 0.80 " |
| TOTAL | 14.44 | 24.95 | TOTAL 3.10 " |
| GRAND TOTAL | 58.00 | 100.00 | |

BUSINESS OCCUPIES FIRST FLOOR OF APARTMENT "B"
DATA FROM THE OFFICE OF JOHN NOLEN

Table 9.

*Housing.*—Twenty types of houses were incorporated into the plan, most of which were arranged in groups of 3 to 10 units. A type of architecture similar to that at Brooklawn was used, being much less stereotyped, however. Construction is entirely of brick, and hollow tile and stucco, with slate roofs. Dwellings average from four to six rooms of adequate size. There are only 10 four-room units. Detached and semidetached lots are of somewhat irregular depth and vary from 35 to 50 feet in frontage. Lots for group houses vary from 16 to 20 feet in frontage and 95 to 100 feet in depth. Set-back lines vary between 20 and 30 feet, while side yards range from 16 to 18 feet between house walls. The scarcity of garages has been present here as in other war housing developments generally but has been somewhat alleviated by the presence of some group garages which were purchased by a private company for rental and are still held in this manner. Garages have, however, been introuced on various corner lots where access to the street was provided. The semidetached house has been the most satisfactory type from all angles according to the city assessor, who has a close knowledge of the community. His estimate of the high percentage of home ownership is interesting in view of the low percentage of detached and semidetached dwellings. This may be accounted for by the relatively large units and lots, the arrangement of the house plan, which gives a maximum of privacy to this type of housing, and the traditional nature of the row house in this section. Deed restrictions similar to those used at Yorkship Village are in force.

*Appearance.*—Union Park Gardens is exceedingly well maintained, both as to private homes and yards and as to public open space. Valley Creek Parkway which runs through the center of the development forms a very attractive open space. The stream and pond development was never carried out, however. Some objection exists to the speed and amount of through traffic over the parkway, although the connection planned at the south end has never been realized. The consistent use of hedges has been highly effective as has been the street planting, while the use of curved street alinement is entirely in keeping with the type of architecture. The Gardens thus may be classed with Cradock and Hilton as highly successful from many points of view.

*Community Facilities.*—It has already been noted that no community facilities have been provided other than the parkway and the adjacent city park, which are entirely adequate for open space and recreation. The absence of a school has, however, caused some families to move to the north side of Lancaster Avenue in order to be somewhat closer to a school (which is only one-quarter of a mile away) but primarily to avoid the heavily traveled Lancaster Avenue. Thus,

the desirability of the school as a central unit inside the boundaries of main traffic arteries is further demonstrated.

*General Considerations.*—The wage-earning group in the Gardens consists of approximately 30 percent skilled workmen, 60 percent clerical employees, and 10 percent professional men and junior executives. It may be said that the two latter groups were primarily attracted to the Gardens because of the adequate size of the houses, the attractiveness and stability of the development, and its close proximity to the business center of Wilmington rather than to the industrial district.

## Power, Reclamation, and Similar Projects—Separate Communities

### Boulder City, Clark County, Nev.

Laid out by the Department of the Interior (1930). Planned for an initial population of 2,000 to 5,000 and a permanent population of 1,000 to 2,000. Town planner, S. R. DeBoer.

Boulder City was built to house construction workers during the building of Boulder Dam and families of permanent employees after the dam was completed. Of especial interest is the location of the city in the desert of southern Nevada. The site is 6½ miles from Boulder Dam and about 22 miles from Las Vegas. Mr. S. R. DeBoer describes the site and how it was selected, as follows:

> The selection of the best site for the town resolved itself into the finding of a site where heat was least oppressive, where the distance from the dam was not too great, and especially where soil was available on which the town and its gardens could be built. Recording thermometers were placed at five points and it was found that the site on a saddle overlooking the proposed lake was approximately 10° cooler than the lower sites. This is due partly to the higher altitude which at this point is 2,500 feet above sea level, and to the circulation of air over the site. The fact that the site is more or less of the character of a pass between two low hills is responsible for the air movement.
>
> The location is about 6½ miles from the dam and about 2½ miles from the future lake. It was felt that this distance was not excessive, especially because the other available sites were all at least 4 miles away from the dam. The selected site was the only place where soil of sufficient depth was available for practical building, and this matter became one of rather great importance.
>
> The topography of the new town site runs more or less fan-shaped from the center of the saddle. This gave the opportunity to build a town of similar shape which would center in the office building of the Government.

The general lines of the town were laid down to fit the topography.

The principles which were embodied in the plan and a brief description are as follows:

1. *Orientation.*—The main axis of the town was laid out 9° from true north to obtain a good distribution of light and shade. Two outer main lines were placed at angles approximately 40° from the main axis. Angles were worked out so as not to get too great exposure of sunlight on any one building wall. The plan contains no block with direct southern exposure.

2. *Off-street Parking of Autos in Business District.*—No autos were to be allowed to park at the curb, but parking space was provided in an open plaza in front of business houses, giving every business house a space for three cars.

3. *Loading Courts in Alleys.*—Setbacks were provided in alleys where trucks may load behind stores.

4. *Separation of Through and Business Streets.*—This was accomplished by leading the main traffic artery from the west past the edge of the business district.

5. *Corner Setbacks.*—These were provided for the sake of easier traffic circulation and better architectural design.

6. *Street Widths.*—Main traffic streets are 112 feet wide with a 56-foot roadway. Business streets are 92 feet wide with a 56-foot roadway, and residential streets are 60 feet wide with a 30-foot roadway.

7. *Open Plazas.*—These plazas, around which business houses are grouped, are a direct outcome of the principle of off-street parking.

8. *Architectural Control.*—All buildings were to be built according to definite architectural design of modified Spanish character.

9. *Classification of Stores in Business District.*—Stores are located with recognition of the natural tendency of businesses of the same type to group themselves together.

10. *Residential Blocks.*—Residences of a duplex type are to be laid out in blocks with widths of 252 to 266 feet and length of not less than 900 feet. Single-family districts are to be laid out in groups of approximately 12 houses with interiors of blocks reserved for parks and playgrounds. Detached single residences are in groups around modified loops with a cul-de-sac treatment.

11. *Playgrounds.*—Interiors of all residential blocks are to be set aside for play space, and a general play space is to be in the interior of every 40-acre tract.

12. *Civic Center.*—Surroundings of the Government building group are to be treated as a civic center and park.

Store buildings were planned to be arcaded over the sidewalk to provide shade.

The foregoing general principles were the basis for the town design. The plan itself shows a governmental group of three buildings, with a town hall and post office forming a civic center at the focal point of the three major boulevards of the town. The business district is a series of open squares. An apartment house district is adjacent to the business district, and

the apartment house units head long 900-foot blocks intended for the multi-family residences. A lineal park area surrounds the first tier of residential blocks, forming a definite boundary to the city in the event that it is necessary to reduce the size after construction operations are over. This park area also forms a parkway around the city which is intended for recreation. Beyond this is a single-family residence district composed of large circular units of about 50 acres each. Houses here are placed in blocks of about 18 dwellings each. These small blocks radiate out from a central park area. This radiation of house groups forms triangular park spaces between the service roads which have been allotted to the abutting property holders. A grade school and a high school site were planned in two wedge-shaped blocks adjacent to the multi-family residence blocks. Near to the high school site is an athletic and recreation field. Church sites are grouped in close proximity to each other for the alleged purpose of stimulating religious activity. An industrial zone lies adjacent to the business area to the west and is on both the highway and the railroad that enter the city from Las Vegas. A golf course and an airport form a partial "green belt" around the city. A tourist hotel is located on a small hill east of the town proper. This site is intended as a future hospital location.

*Housing.*—Permanent houses erected by the Government are of brick and stucco. They are air-conditioned and have electric heat. Those erected by construction companies are of wood and stucco, are mostly of three rooms, and are rented to employees. It was found in the insulation of houses that adobe, generally accepted as very heat resisting, had less insulating value than brick and but slightly more than concrete. The coolness of adobe walls was due to their thickness. Pumice stone and slag concrete were found to have the best insulating qualities.

During the construction of Boulder Dam, the water supply had to be pumped from the Colorado River, a lift of 1,800 feet. When the lake is full, this lift will be reduced to around 1,200 feet. However, the supply has to be pumped a distance of 6¾ miles. The water is filtered and pumped to a storage tank and delivered to mains by gravity at 80 pounds' pressure. The distribution system comprises 50,000 feet of 6- to 12-inch cast-iron pipe 3 feet below grade. Copper service pipes run to the curb.

A sewerage system includes a disposal plant a quarter of a mile from the town.

The foregoing brief description of the plan of Boulder City was abridged from a report of Mr. DeBoer. Various fundamental changes have been made in the plan, and are discussed in section 3.

**Norris, Tenn.**

Established in 1933–34 and developed by the Tennessee Valley Authority. Unincorporated. Population in 1936, 1,300 to 1,400. Town planners, Division of Land Planning and Housing, Earle S. Draper, director.

Norris was established under the Tennessee Valley Authority Act of the 73d Congress, and was set up primarily to provide housing for construction workers on Norris Dam. In order to avoid the waste of labor and materials resulting from the construction and later abandonment of the usual temporary "construction town," it was decided to build a permanent community to accommodate from 1,500 to 2,000 people—workmen and their families. The workmen would be employed over a period of years in the construction work on Norris Dam and reservoir and in other nearby Tennessee Valley Authority projects. It was considered that the roads, sewers, and water-supply facilities for a temporary housing project would have to be nearly as well constructed and expensive as for a permanent project and that, therefore, the difference between the cost of temporary and permanent housing might well be offset by the continued economic value of the permanent town. In addition, if the town did become a permanent community based upon local economic conditions, where local crafts and industries could be carried on in combination with farming, the town would be a social and economic asset to the region, consistent with the purposes of the Act. Norris was not looked upon as a "model town," if by that is meant a concrete demonstration of a definite preconceived theory of physical or social planning. It was designed to meet the immediate practical needs of the Norris Dam project; but in doing so, it was recognized that the town might serve other desirable ends—such as, for instance, training the people in better living conditions and in more profitable occupations, starting some permanent new local industries, and demonstrating experimentally the methods of house construction and town layout best suited to local conditions, not only for the use of later Tennessee Valley Authority projects but also for the region generally.

*Location.*—Mr. Tracy B. Augur, assistant director of land planning, says in connection with the location and kind of town planned at Norris (*American Architect*, April 1936):

* * * Within a reasonable radius of the job (the determining factor in location) the country was rugged and good roads and railroads were lacking. The Dam is now 4½ miles from a railroad. There was nothing to indicate the need for a large city or any likelihood of its success * * *. Small towns, on the other hand, serving as rural trading and manufacturing centers, are characteristic of the area. Improved roads are rapidly knitting the villages within a 30-mile radius of Knoxville into a metropolitan cluster, with Knoxville as its hub. It, therefore,

seemed logical to plan Norris * * * to take its place with other small towns in that complicated mechanism of modern life, the metropolitan community.

With this in mind a suitable town site was sought convenient to the job, but also located so as to tie in naturally with the metropolitan network about Knoxville. This necessitated study of possible and probable future roads, as well as of general topography, water supply and drainage, climate, and the growth to be anticipated in the Knoxville region—the last particularly as it might be affected by the developmental program on the Tennessee River and its tributaries. The interplay of these many factors led to the selection of a site between the dam and Knoxville, about 23 miles from the city over the new road projected to bring materials to the job (and about 4 miles by road from the dam site).

*The Plan.*—The town site chosen was sparsely settled and accessible only by several dirt roads which were often impassable in wet weather. About half of the area was covered by woodland, chiefly second growth, and little local building materials were available other than stone, which was more expensive than wood for building purposes. The site finally chosen was a rolling upland, partially wooded, offering many building sites with good local views or fine distant views of the mountains. It is bounded on the west by the steep valley of the Clinch River below Norris Dam, on the north in part by the steep narrow valley of Clear Creek, the town water supply, on the west by the open valley of Buffalo Creek, and on the south by the "freeway" which gives access to the town, and, bypassing the town, connects Knoxville by way of Norris Dam with the existing highway system to the north.

The town site, with its protective zone or greenbelt, thus bounded, includes an area of approximately 2,000

FIGURE 21.—As planned and largely developed

acres in which are located in suitable places the subsistence garden tracts accessible to persons in the town desiring to raise some of their own foods. The greenbelt contains more extensive farm areas, including a dairy farm, and also includes extensive recreational facilities for the residents and for visitors to the area. Mr. Augur says of the greenbelt provision:

> * * * Its effectiveness as a deterrent to real estate speculation based on the building of the town, is shown by the fact that only two small subdivisions were attempted in the adjacent area, and both in locations so remote that their existence is almost unknown * * * Norris is the first self-contained new town in this country to utilize it (the greenbelt principle) completely, although it is now recognized here and abroad as one of the most effective measures for preserving the identity and character of small communities.

In relation to the plan of the town itself, the following points are to be emphasized:

1. All streets have been moulded to the uneven topography and are curvilinear. House sites are related primarily to their particular topography and not in any mechanical way to the street lines.
2. The advantages and disadvantages of culs-de-sac have been recognized, and they have been planned when the conditions indicated.
3. All roads have been graded and hard-surfaced to prevent erosion. Stone gutters are provided to serve as leaders to natural drainage channels where the flow of water makes this necessary.
4. Footpaths recognize the needs of pedestrian traffic, and sometimes lead through the interior of blocks, not necessarily running parallel to the roadways.
5. Garage groups have been conveniently located in the interior of each block with easy access to the street.
6. Telephone and electric service lines have been, in the main, located to the rear of the houses, close enough to them and high enough to be out of the line of vision from windows and porches. This has resulted, particularly in the many wooded areas, in making the lines relatively inconspicuous.
7. The water supply is pumped to a 250,000-gallon storage reservoir, furnishing a gravity supply to the town. The sanitary sewers run to a sewage treatment plant.
8. The town was planned for 2,000 or more construction workers, with an expected permanent population of about 500 families within a few years, and utilities were planned as an efficient part of a possible future system for a community of 5,000 to 6,000 persons.

In regard to the disposition of areas, Mr. Augur states:

> * * * The town framework * * * contained three focal points: a community center near the middle of the whole buildable area, a construction camp site at the point of approach to the town from the job, and a (work) shop center, chosen with an eye to future industry, below the town and nearer the main highway. Between these three points the network of the first unit of houses was laid out. Although the community center was thus placed toward one edge of the initial residential development, it was so located as to be central to the ultimate town, to occupy a position conveniently accessible to all parts of the community and to be easily approached from outside * * *. The street system for this first unit is complete in itself, but can be added to when needed.

*Subsequent Development.*—The first unit of Norris is essentially completed. Some interesting aspects of preplanning in relation to actual construction are commented upon by Mr. Augur as follows:

> * * * The site could not be carefully surveyed and completely planned and studied to perfection before any part was built. In fact, under the pressure to get houses built, whole streets were peopled before full plans were drawn for the community of which they formed a part * * *. Planning and construction and the beginning of the town's new life went on hand in hand. Each day saw plans adjusted to new situations that the day brought forth—as town plans must ever be if made for living places built for living people * * *. (However), the fundamentals of the plan were never sacrificed—a recognition of the underlying purposes of the community—a sympathetic treatment of the site, abundant open space for children's play and adult recreation, attractiveness in all things big and little, from the iron bracket of the street signpost to the roadway's gentle curve and the school's straightforward architecture, simplicity, economy, a place designed for pleasant living and convenient work.

It should be noted that the Norris Dam is essentially completed and that Norris is at present in the anticipated transition stage between its function as a construction town and that as a permanent community. It is, therefore, impossible to determine the status of the population and income groups with any accuracy as they were changing at the time the community was visited.

*Housing.*—Over half of the construction workers on the dam were provided for in a barrack group at the southwest end of the town. Present plans call for the remodeling of one of the larger buildings, the cafeteria, into offices for Tennessee Valley Authority use, largely in connection with management of the reservoir area. The original girls' dormitory, later used as an infirmary, has been restored as a residence hall for single women working in the town. Offices, a lunch room, and other miscellaneous uses will occupy part of one or two other buildings, the remainder being closed until some further use for them is found.

Workers with families were housed in the town proper. About 35 basic types of house designs were used, varying from two to seven rooms, with three- to four-room, one-story types predominating. The houses are, in general, larger than those to which the local inhabitants were accustomed. In addition, sufficient headroom above the ground story permits conversion of the upper floor into sleeping rooms; and large

porches, at the rear of the dwellings, screened in summer and fitted for glazing in winter, provide additional floor space. In July 1936, 281 detached single-family residences, 20 semidetached units, and 30 apartment units had been constructed, which, with a number of rehabilitated farmhouses already on the site, make a total of about 350 dwelling units.

Representative housing types are shown in table 10.

TABLE 10.—*Housing types, Norris, Tenn.*

| Number of rooms | Type | Cubage | Material | Remarks |
|---|---|---|---|---|
| 3 | No. 33 | 17,187 cubic feet (including porch) | | |
| 5 | No. 54 | 19,750 cubic feet (including porch) | Brick | |
| 3 | No. 21 | 11,520 cubic feet (including porch) | do | |
| 3 | No. 34 | 11,830 cubic feet (including porch) | Wood | |
| 4 | No. 41-D | 18,754 cubic feet (including 2 porches). | Brick | |
| 3 | No. N-2 | 12,900 cubic feet (including porch) | do | |
| 3 | No. D-1 | | do | Glassed-in "breezeway." |
| 6 | No. 63 | | | 2 stories, 4 bedrooms; hillside. |

Other types built in 1935 are of cinder-concrete block, with slab floors and metal roofs.

The construction took place in the following order:

| Construction of— | Type | Material | Number of families |
|---|---|---|---|
| 1st group built | Single-family | Frame | 151. |
| 2d group built | Single-family | Cinder concrete block | 80. |
| 3d group built | Single-family | Cinder concrete block, frame, and stone. | 49. |
| 4th group built | 10 duplex semidetached | Frame | 20. |
| 5th group built | 5 apartments | Frame | 30. |

There was no attempt to segregate houses according to type or cost.

In determining the cost of housing to be constructed, the assumption was made that the income of the families destined to occupy the houses would be comparable to the income of the workmen who built them. Thus, housing construction costs have been based upon two factors: (1) a controlled wage scale and (2) known material costs.

All houses are for rental and not for sale. All inhabitants have free use of garden plots.

Costs varied considerably in the different house groups built, from an average of $1,130 per family unit in the 10 duplex houses to $5,752 in the completely electrified group. Between these came the group of 80 cinder-block houses, heated by coal stoves, which ranged in cost from $1,744 for a one-story four-room house to $2,828 for a two-story type. These figures include construction overhead, lot improvements, and house connections to service facilities.

In the first group of 151 houses, costs also cover full electrical equipment, including range, refrigerator, hot-water heater, and room heaters. In this group of houses, differences in size, floor plan, and materials resulted in a cost range of from $4,342 for a three-room brick veneer house to $8,657 for a seven-room brick veneer. One of the most popular intermediate types, a four-room house built in both frame and brick veneer, with two screened porches and an attic space capable of subdivision into additional sleeping rooms, cost an average of $6,200 complete.

Rentals are not strictly proportional to house costs but are arranged to create a parity in living costs between Tennessee Valley Authority personnel living at Norris and elsewhere in the immediate region. Rentals, in other words, are intended to be equivalent to the rentals charged for comparable accommodations in Knoxville and surrounding towns. This rule, of course, recognizes differences in floor space, conveniences, and location, and so gives a result reasonably proportional to the cost of the house.

Actual costs and rentals now in effect at Norris are of interest. These rentals are slightly higher than those charged during the construction period.

TABLE 11.—*Housing costs and rentals, Norris, Tenn.*

| House group | Number of units | Total cost | Average cost per unit | Total monthly rent | Rent in percent of cost |
|---|---|---|---|---|---|
| Group I | 152 | $1,015,731.73 | $6,682.44 | $5,100.00 | 0.503 |
| Cinder-blocks and stone | 117 | 309,948.26 | 2,640.58 | 2,234.00 | .722 |
| KP's (a special type) | 12 | 29,125.95 | 2,427.16 | 276.00 | .949 |
| Duplexes | 20 | 26,732.46 | 1,336.62 | 280.00 | 1.045 |
| Apartments | 30 | 57,575.82 | 1,919.19 | 557.50 | .969 |
| Total | 331 | 1,439,114.22 | | 8,447.50 | |
| Average | | | 4,345.96 | | .587 |

The increasing ratio of rental to cost as the unit cost decreases is due to the fact that rentals cover municipal services (education, policing, road maintenance, general administration) which are more or less constant per family, as well as the charges against the house itself.

Every effort has been made to create a type of housing which is thoroughly convenient in use and at the same time in character with local climate and style, and with the character and desires of the local inhabitants. Thus, fireplaces have been provided as well as electric heat, the "dog-trot" or "breezeway" house has been adapted to modern conditions of living, and basements have been dispensed with because of cost, local tradition, mild climate, and the provision of electric heat in most of the houses.

*Appearance.*—Norris has perhaps the most natural and informal appearance of any of the communities visited. This is the expectable result of thoroughly recognizing in the plan the physical character of the site. It is also the result of considering local tradition

and the character of the region and its people. Thus, no attempt has been made to superimpose any development upon the community in the form of design or use of materials which was not wholly natural and fitting. The resulting harmony of the natural with the man-made speaks for itself. The criticism has been voiced that the plan lacks composition, but any composition which would have resulted from the introduction of strong formal relationships is happily absent, and in its place a more subtle form of unity has been obtained based on functional and topographic relation. Any visually balanced relation of parts has been limited to the community center. It should be remembered that the community center as it stands now has not been by any means completed, and the expected residential growth to the north of it has not yet taken place.

*Community Facilities.*—The town center at Norris at present includes a 20-room grade and high school accommodating about 400 students, with community auditorium and gymnasium, and a business group, containing the town offices, general food store, drug store, post office, and telephone exchange. Additional sites have been reserved for about seven other public and semipublic structures, including an inn, church, clubhouse, and additional stores. The school is equipped with an athletic field, behind which is a 14-acre playground and wooded recreation area. The civic group faces upon a large depressed town common which is planned to form the heart of the town center. The development of the town center has not been entirely in accordance with the original plan. The busines activities, instead of being contained in a building facing on the common, are in a structure facing away from the common upon an acces road. This tends to set up a competing center at this place, not provided for by the plan, and at best to postpone the completion of the visual effect of the town center. However, if the future needs of the town justify the occupation of enough of the enclosing sites around the center, the final result may be as good, and a certain crowded effect near the schoolhouse may be avoided.

Community activities are represented by organizations such as the consumers' group which operates the food store and gas station, a religious fellowship which has so far eliminated sectarian competition in this small town, a Parent Teachers' Association, Garden, Sportsmen's, and Tennis Clubs. The community workshops, of course, furnish a social outlet as well as instruction. Movies are shown twice a week, and a community newspaper is maintained. Although much of the community activity was originally sponsored by the Authority, it is being taken over more and more by the residents themselves as the town takes on permanent character. The 5½-hour workday used in the construction of Norris Dam permitted extensive use of recreational and educational facilities, the workshops being one of the most successful ventures in this respect.

*Government.*—Norris is at present essentially a "company town," under the complete control of the Authority with respect to the usual functions of government. The town operates under a town manager appointed by the Authority. However, it is anticipated that Norris may eventually become an independent municipality incorporated under the laws of Tennessee. This end has been approached by the organization of a town council which is elected by the citizens and functions in an advisory capacity to the town manager.

*General Considerations.*—It will be noted that no income groups have been given in table 16. This is because of the change which is now taking place. It is anticipated that over 100 of the present tenants will continue to reside in Norris. The present group represents a wide range of income from approximately $800 to $10,000 per year, which range will vary greatly one way or the other depending on whether Norris tends toward self-sufficiency through local industries or becomes a commuting town satellite to Knoxville. The commuting population is now confined to a small group of Tennessee Valley Authority men who work in the Knoxville office but prefer to live at Norris.

Comments regarding the successful use of several of the details of the plan are worth noting. It was felt that the disposition of the overhead wiring was both unique and highly satisfactory. The use of the school as a community building has worked out well. The group garages have not been particularly popular, however, since up to the present many tenants have kept their cars—under cover or not—on their own lots. In relation to the juxtaposition of the business and social center, it was felt that it was advantageous in a small town to have them combined, thus forming a stronger center than would otherwise be possible. This arrangement is without doubt advantageous where plan, execution, and control are vested in a single authority. Mr. Augur states in this connection that the policy of single control "was adopted automatically at Norris, since the entire community was built by the Tennessee Valley Authority for its own use, and the entire site was acquired in the name of the United States. What disposition will be made of the site in the future has not yet been decided, but it is expected that the principle of single control and management in the interest of the community as a whole will be continued."

## Demonstration Projects—Separate Communities

### Greenbelt, Prince Georges County, Md.[3]

Founded in 1936 and being developed by the Suburban Resettlement Division of the Resettlement (Farm Security) Administration. Planned by Suburban Resettlement for a present population of approximately 4,000 persons with provisions for approximately 8,000 additional persons. Town planners, Hale J. Walker and Harold Bursley. Architects, T. P. Ellington and R. J. Wadsworth.

*Location.*—Greenbelt is located about 5 miles north of the District of Columbia line near Berwyn Heights. The town site comprises 2,000 acres of land adjacent to the future 5,000-acre research center of the Department of Agriculture. The primary factors leading to the establishment of the community and the selection of this site as part of the Resettlement program were:

1. A housing shortage in Washington.
2. The existence of a declining county close to Washington which needed revitalizing on an economic basis, with submarginal land available for development.
3. An opportunity to crystallize a portion of the existing regional plan covering 18,000 acres of surrounding area.
4. A site ideally located with reference to the research center which will create a buffer to the north, requiring less land purchase for protection at the periphery than would otherwise be needed.

*The Plan.*—The present plan, which provides for 1,050 dwelling units, is essentially a series of superblocks, each of about 15 acres, which surround a central area devoted to business, school, and community center. Pedestrian underpasses which lead to the central area have been provided in each block under the main thoroughfare. Two concentric main thoroughfares with cross streets at intervals provide access to the blocks and group garages. The area devoted to housing and intensive urban development comprises about 225 acres, with the remaining area forming a permanent green belt about the town site to be utilized as allotment gardens, small farms, recreational and woodland areas. The land is rolling, and the disposition of the plan has followed closely the dictates of the topography.

*Primary Factors.*—Greenbelt is based primarily upon the advantages to be obtained through the method of cooperative purchase. It is essentially an attempt to adapt the garden-city principle to American conditions. It differs, however, in two respects: (1) A cooperative leaseholders' organization will be set up and will hold title to the land. A lease to the property, 1-year renewable at present with the possibility of a 10-year renewable lease in the future, will thus replace the copartnership stock plan used in England. (2) The schools will be deeded to the county school system and operated by the county.

The project, including residence and business units, when completed will be deeded to the leaseholders' organization with restrictions. It is then intended that a separate municipal government be formed, distinct from the cooperative organization but working closely with it.

The community is designed to serve an average income group of $1,500 per year, with an estimated range of $1,200 to $2,400. Census data of the Washington region have been broken down and used in determining the population and family characteristics. The community has not been planned as a self-contained town with regard to employment, although about 200 acres, part of which lie within the 2,000 acres of the town site, are available for industry. It is primarily intended for Government employees working in the research center and in the northeast section of the District. It is anticipated that the research center will provide employment for about 5 percent of the expected population. However, it was planned that all of the community's needs should be met, so far as possible, through cooperative trading.

*Housing.*—Group housing has been adopted almost exclusively. Of the 1,050 dwelling units, 64, or 6.1 percent, are two family, semidetached; 648, or 61.8 percent, are group; 288, or 27.4 percent, are multifamily; and 50, or 4.7 percent, are semidetached farm dwellings. Group housing varies from four- to eight-family units per group, arranged in a manner to provide a common yard and group garages on the service entrance, and direct access to interior parks on the park entrance.

Construction is of brick veneer, and stucco on cinder block. Each group of houses is provided with one furnace which heats all of the units in that group, thus requiring only one basement room. The average number of rooms per dwelling unit is 4.5, with a range of usable floor space from 450 to 700 square feet, averaging approximately 500 square feet. Apartment houses will contain a common recreation room for each group of six families, a common laundry, and individual storage space.

The water supply will be obtained from the Washington Suburban Sanitary District Commission and be distributed through a municipally owned distribution system. Separate storm and sanitary sewers are being provided, and sewage will receive a preliminary treatment through a 2-million-gallon sand filter. Electric service will be obtained through the Potomac Electric Power Co. at a rate of approximately 13 mills per kilowatt-hour. Rents are planned to range from $20 to $45, with $30 per month as an approximate average. The average rate per room has been estimated at $8 per month, including all utilities. It is estimated that on

[3] This is one of 3 Resettlement Administration projects under construction in 1937. The other 2 are Greenhills, Ohio, and Greendale, Wisconsin.

the above rental basis, the project will liquidate, over a long-term period exceeding 40 years at 3 percent, all the costs which would have been incurred by a private contractor. This takes into consideration the fact that the Government is not willing that the community should bear the excess costs due to its being an emergency construction project, and due to the provision of benefits which will accrue to the county. The rents thus set will therefore be adequate to provide payment in full, including that for utilities, at 3-percent interest, and taxes, over a long-term period under a 45-percent grant of the Government. While the desirability of having diversified income groups in the community is recognized, it has been felt desirable to start at the lowest economic level possible and allow diversification to come about automatically through expansion over a period of years.

*Community Facilities.*—In addition to the common park areas within each superblock, the central area provides a school and community center, and a business group of 15 store units to be operated by the community organization for its own benefit. An athletic field is located adjacent to the school. Water areas and other recreational areas have been allocated in the greenbelt, which will be available to the residents of the county as well as to the community.

The following benefits to the locality are anticipated or have been realized in part by the establishment of Greenbelt:

1. An increase in the prosperity of the county as a result of stimulating the growth of Washington in its direction.
2. Two thousand acres assessed at present for $400,000 will be turned back to the county at an estimated valuation of over $4,000,000, which will contribute an estimated net revenue of $90,000 per year.
3. Recreation facilities will be available for county residents without bringing them into the community itself.

## Capital Cities

### Washington, D. C.

Washington's position as the capital city of the Federal Government and by far the largest of the planned cities in this country sets it distinctly apart from any of the other developments considered in this study. For this reason, it has not been included in the tables or general discussions of this report. The discussion of Washington has, however, been arranged as far as possible in a similar form to the other discussions, for ease of comparison. There is a great deal of literature descriptive of Washington from many points of view. It is not practicable even to summarize it here at any length. This discussion covers only the question of the plan of Washington, as it has been developed and administered, and the effect of this process of evolution upon the welfare of the city, as far as this effect can be plainly traced.

*Location.*—The location of the capital city was at the beginning a question of national importance and political controversy. The need for a permanent location for the seat of government was suggested in 1779 after the Continental Congress had met in 8 different cities on 10 different occasions between 1774 and 1789. In 1783, sites at Kingston, N. Y., Annapolis, Md., Williamsburg, Va., and a choice of sites in New Jersey were offered, in addition to an offer by the State of Virginia of land along the Potomac River with the provision that Maryland should cooperate by providing land on the opposite bank. After much maneuvering among various factions representing the interests of the Northern and the Southern States, consideration was finally limited to two sites: one favored by the southern Members of Congress, on the Potomac River near Georgetown, the other at Wrights Ferry, Pa., near the falls of the Susquehanna River. George Washington exerted his influence for the final selection of the former site in 1790 on the ground that it was on a waterway providing communication to the west, but far enough from the coast to be removed from enemy attack. This seems to have been the deciding factor in favor of the chosen location. The final selection of the site by Washington was restricted by an act of Congress on July 16, 1790, to some place between the mouths of the Eastern Branch of the Potomac River (Anacostia River) and the Connogocheque (a tributary of the Potomac, 20 miles south of the Pennsylvania State line). In 1791, final lines were run bounding the District which enclosed a square with north-south and east-west diagonals, with an area of 100 square miles, about 64 square miles of which lay in Maryland and 36 in Virginia. Land for the city proper was conveyed to the Government by 19 private landholders on March 30, 1791. All land needed for streets, parks, and other public open reservations cost the Government nothing; such land as should be needed for public buildings was to be purchased by the Government at about $67 per acre, and the remainder was to be divided into building lots and apportioned equally between the Government and the original owners.

*The L'Enfant Plan.*—L'Enfant's original ample and dignified conception of the plan of Washington, which motivated his later paper plan, is expressed in his letter to George Washington, dated September 11, 1789,[4] in which he said:

[4] This and later quotations from L'Enfant's letters are taken from Elizabeth S. Kite's *L'Enfant and Washington*, The Johns Hopkins Press, Baltimore, 1929.

No nation had ever before the opportunity offered them of deliberately deciding on the spot where their Capital City should be fixed, or of combining every necessary consideration in the choice of situation, and although the means now within the power of the Country are not such as to pursue the design to any great extent, it will be obvious that the plan should be drawn on such a scale as to leave room for that aggrandizement and embellishment which the increase of the wealth of the nation will permit it to pursue at any period however remote * * *.

Again, in a document addressed to Washington, supposed to bear the date of March 26, 1791, L'Enfant says of the scope and pattern of the plan:

In viewing the intended establishment in the light and considering how in process of time a city so happily situated will extend over a large surface of ground, much deliberation is necessary for to determine on a plan for the total distribution and * * * that plan [should be conceived] on [such] a system * * * as to render the place commodious and agreeable to the first settler, [while] it may be capable of * * * [being] enlarged by progressive improvement * * * [all] which should be foreseen in the first delineation in a grand plan of the whole city combined with the various grounds it will cover and with the particular circumstance of the country all around.

In endeavoring to effect this, it is not the regular assemblage of houses laid out in squares and forming streets all parallel and uniform that it is so necessary, for such a plan could only do on a level plain and where no surrounding object being interesting it becomes indifferent which way the opening of streets may be directed.

But on any other ground, a plan of this sort must be defective, and it never would answer for any of the spots proposed for the Federal City, and on that held here as the most eligible it would absolutely annihilate every [one] of the advantages enumerated and * * * alone injure the success of the undertaking.

Such regular plans indeed, however answerable they may appear upon paper or seducing as they may be on the first aspect to the eyes of some people must even when applyed upon the ground the best calculated to admit of it become at last tiresome and insipid and it never could be in its origin but a mean continuance of some cool imagination wanting a sense of the real grand and truly beautiful only to be met with where nature contributes with art and diversifies the objects.

In later correspondence he further says:

With respect to the point upon which it is expedient first to begin the main establishment however various the opinions thereon are, I believe the question may be easily solved, not viewing in part but embracing in one view the whole extent from the eastern branch to Georgetown, and from the banks of the Potomac to the mountains, for in considering impartially the whole extent, viewing it as that of the intended city, it will appear that to promote a rapid settlement throughout, across the Tiber above tide water is the most eligible one, for an offset of the establishment which * * * should be begun at various points equi-distant as possible from the center; not merely because settlements of this sort are likely to diffuse an equality of advantages over the whole territory allotted, and consequently to reflect benefit from an increase of the value of property, but because each of these settlements by a natural jealousy will most tend to stimulate establishments on each of the opposed extremes, to both of which it will undoubtedly become, as so many points of union * * *.

L'Enfant did not, however, intend that what are now the executive branches of the government should be themselves diffused. He says:

Fixed as expressed on the map the distance from the Congressional house will not be too great * * * as * * * no message to nor from the President is to be made without a sort of decorum which will doubtless point out the propriety of Committee waiting on him in carriage should his palace be even contiguous to Congress.

To make however the distance less to other offices I placed the three grand Departments of State contiguous to the principal palace; and on the way leading to the Congressional house, the gardens of the one together with the park and other improvements * * * are connected with the public walk and avenue to the Congress house in a manner as must form a whole as grand as it will be agreeable and convenient to the whole city * * * and all along side of which may be placed play houses, rooms of assembly, academies and all such sort of places as may be attractive to the learned and afford diversion to the idle.

In this statement may be seen the idea which today has been carried to a high degree of concentration.

His comprehensive grasp of the problem not only of planning but of building the Capital City, and his fear of the scheme being thwarted by private speculation is expressed by L'Enfant in a condensed memoir, dated August 19, 1791:

I conceive it important not to confine the building idea to erecting a Congress House and a President's palace * * * other exertions are necessary to set going and to enlarge private undertakings.

If we are to make of this city a fact it will be indispensable to consider every part of the proposed plan as essential * * * and however unconnected they may appear at first every part should go forward with a proportional degree of despatch.

Whatever will advance mercantile interest should be pushed with the greatest activity; as the canal from the Tiber to the Eastern branch which is absolutely necessary in order to insure a speedy settlement of that part and to help convey the material to the two grand edifices.

The making of the public walk from under the Federal House to the Potomac and connected with the palace * * * will be productive of equal advantages with the foregoing as it will give to the city from the very beginning a superior charm over most of those of the world as it will likewise be an improvement over all in point of convenience of distribution * * *. After bringing the various squares to their intended shape, leveling every grand avenue and principal street * * * and extending the improvements in a way to attract settlements thereon, there will be no necessity of hastening to encourage them to chuse the best situations, which it may be well to preserve until the great rise in their value makes it worth the sacrifice.

These ideas * * * which met with your approbation at the beginning, having directed my attention to devising a plan of distribution of localities has made me consider the idea of appropriating several squares to be allotted to each of the several states and also the making a free donation to every particular religious society of ground for a house of worship. A move from which infinite advantage must result.

Betwixt the two edifices, the streets from the grand avenue to the palace and towards the canal will be proper for shops * * * which undoubtedly will increase in a short

time to a number sufficient to meet the needs of every one * * *.

Methods so out of the ordinary for developing a town will presumably meet with your opposition and be objected to by others. As it may effect public speculation in public property many will decide against the idea * * * but confident that in the end this system will prove best able to promote real prosperity, I feel the more encouraged to submit my ideas thereon to your judgment.

As to the means necessary to secure the success of the system I will observe that however extensive, proportioned to the magnitude of the undertaking, yet I consider the property at your disposal fully proportioned to the object—if attention is given to managing it.

15,000 lots will fall in the share of the public as half of the property left for improvements after deduction is made for streets and for ground appropriated to public uses. These lots will be of various sizes from 66 feet to 37 in front and from 4 to 7 in an acre. The sum that will arise must be immense but as I observed before—only if it is cautiously managed. For if the most valuable lots are offered on low terms, it would in my opinion prove as destructive to the attainment of the grand object as would a timorous survey tending to lessen the planned measurements * * *. For to look upon the property at this moment as a source of supply and to use it to defray the first expenses would be to destroy the capital from the very beginning * * *.

From these considerations, and viewing the matter in this light, being persuaded that money is the wheel to give motion to the machine * * * I shall now call your attention to the advantages which may be expected from borrowing a sum on the credit of the property itself.

Under the facility of a loan there would be no hurry to dispose of lots, and it would then be possible to appropriate a sum to each particular object so that all could progress regularly and at the same time.

Thus every improvement could be completed without the restraint of petty saving, and every private undertaking could be assisted where a reciprocity of benefit would ensue. This mode of procedure I venture to assert, would in the end bring three to one for the money expended and would raise the reputation of the undertaking to a degree of splendor and greatness unprecedented that would in turn increase the population, develop commerce and in a short time raise the city to one of the first the world contains.

In this manner, and in this manner only, I conceive the business may be brought to a certainty of success. It was my wish to delineate a plan wholly new and which combined on a grand scale will require more than ordinary exertions but not more than is within your power to procure.

The major characteristics of the L'Enfant plan have been authoritatively treated by Mr. William T. Partridge in his study for the National Capital Park and Planning Commission (*Reports and Plans*, *Washington Region*, National Capital Park and Planning Commission, Supplementary Technical Data to Accompany *Annual Report*, 1930) from which the following brief statements are taken:

As L'Enfant stresses the accommodation of his plan to the topography, the first step in any discussion of his plan is a study of the conditions existing on the site of the future city.

The city of Washington lies within the Y formed by the junction of the Potomac River with the Eastern Branch (Anacostia River). Originally the land rose gradually from these rivers to a range of encircling hills and was drained by five streams across the city site. The large springs at the sources of these streams afforded an abundant supply of pure water, a strong consideration in those days.

* * * The eastern part of this ground was marked by a plateau with an elevation of 80 feet above the river and some 60 feet above the plain at its western foot. There was a knoll at the western edge of this plateau known as Jenkins Hill, which was selected as the Capitol site.

* * * The distinguishing and most important fact about the creation of the plan of Washington is that L'Enfant began his work not by laying out streets or by running survey lines but by the selection of dominating sites. It was from and around these sites that the plan was later developed.

The central feature of the plan of Washington is the Capitol-Mall-President's House composition. The sites for the buildings and monuments of this composition were the first selected by L'Enfant.

Regarding his methods used in locating axes, streets, and avenues, L'Enfant states in his letter to President Washington, dated June 22, 1791:

* * * having determined some principal points to which I wished to make the others subordinate, I made the distribution regular with every street at right angles, North and South, East and West. * * *

The next paragraph of this letter says of his avenues:

* * * and afterwards opened some in different directions, as avenues to and from every principal place, wishing thereby not merely to contrast with the general regularity, nor to afford a greater variety of seats with pleasant prospects, which will be obtained from the advantageous ground over which these avenues are chiefly directed, but principally to connect each part of the city, if I may so express it, by making the real distance less from place to place, by giving to them reciprocity of sight and by making them thus seemingly connected, promote a rapid settlement over the whole extent, rendering those even of the most remote parts an addition to the principal, which without the help of these, were any such settlement attempted, it would be languid, and lost in the extent, and become detrimental to the establishment.

Mr. Partridge, after a study of the plans and writings of L'Enfant, makes the following observations:

The system of radial avenues—superimposed on the gridiron—has been generally credited with influencing the plan. It is the author's belief that they were a secondary consideration and were added by L'Enfant to do exactly as he states—to shorten distances and afford direct lines of communication from the city entrances (the "outroads") to the principal buildings.

The two principal foci for the radiating avenues are naturally the sites of the two principal buildings—the Capitol and the President's House, the "Town House" and the itinerary column on the site of present Lincoln Park forming secondary centers. The two principal avenues east of the Capitol followed closely the line of the original roads, and, as before mentioned, may have suggested the radial system. Almost all of the avenues of Washington radiate from principal points in pairs symmetrical on their north-south or east-west street axes. All the pairs differ in angles, sustaining the argument that the objectives of the avenues were the determining factors. For instance, the angle between the pair of principal avenues east of the Capitol is thus much greater than any other pair, on account of the objectives, viz, the Anacostia Drawbridge and the old Bladensburg Road entrance.

The influence of George Washington in omitting certain radial thoroughfares, of Ellicott in redrafting the original L'Enfant plan, and of Dermott, whose plan was the first to be officially approved, is summarized as follows by Mr. Partridge:

> The executed plan of the Federal City as redrawn by Ellicott departs but little from the modified L'Enfant plan. The changes are perhaps an improvement on the layout as modified by President Washington.
>
> The chief alteration shown in Ellicott's engraved plan is the straightening of what is now Massachusetts Avenue. The suppression of the eastern portion leading to the upper bridgehead made it end at the present Lincoln Square, the drawbridge over Eastern Branch being reached by what is now Kentucky Avenue.
>
> By moving the marine hospital site north some distance and ignoring the Rock Creek Ford at the other end, Ellicott was enabled to run Massachusetts Avenue in nearly a direct line; the western end reached the road to Frederick, as it did in L'Enfant's plan.
>
> * * * Dermott's later plan, the officially approved plan, had many more city squares and consequently more lots for sale. * * * In 1802 a congressional committee found "that the plan of the city was originally designed by Major L'Enfaut, but that in many respects it was rejected by the President, and a plan drawn up by Mr. Ellicott purporting to have been made from actual survey and which was engraved and published by order of General Washington in the year 1792".
>
> As the surveying had been done under the direction of L'Enfant, there can scarcely be a just claim for originality on the part of Ellicott's admirers.

From the foregoing discussion, it is evident that L'Enfant's conception of the plan extended far beyond the mere lay-out of a pattern of street. The plan, however, insofar as it operated officially to direct the development of the city, was essentially a street and public building site plan. L'Enfant apparently did not think of the street system in relation to any detailed scheme of differentiated private land use. As a result, the subsequent use of land has borne little or no relation to the street system. This has made it difficult to zone the city effectively and has been in part responsible for the present problem of traffic and transportation. Had L'Enfant been permitted to carry out his ideas without interference, it is possible that some scheme of land use might have evolved. He had in mind, of course, the type of residential land use current in his time, and this has indirectly resulted in the existence today of the inhabited alley. This problem has arisen mostly from the large blocks which occurred in a number of places on the original plan, the erection of servants' quarters on the rear of deep lots, and the subsequent decadence of once high-class residential neighborhoods, at which time these dwellings reverted to landlords who further exploited the alley dwellings. This problem is now being adequately attacked for the first time under the Alley Dwelling Authority of the District.

Several other features of the plan may be pointed out which have had considerable effect on the subsequent growth and character of the Capital. It will be noted that about 60 percent of the original plan was dedicated to streets. The area devoted to streets in the old city in 1927 was about 45.5 percent, not including the area of the Mall, West Potomac Park, and the Speedway, the latter two not being included in the original plan. This ample provision of streets at the time of purchase cost the Government nothing according to its agreement with landowners. Its value today in facilitating the movement and parking of motor traffic fully justifies its existence in spite of the many years during which much of it lay unused, earning the city the appellation of a city of streets without houses. Of course, L'Enfant could not have predicted the automobile, but the present unforeseen result still shows the breadth of L'Enfant's vision in his insistence upon a "grand plan of the whole city, combined with the various grounds it will cover and with the particular circumstance of the country all around."

The use of squares and round points and the superimposing of the radial street system upon the basic gridiron pattern have contributed to the high percentage of street area by the numerous acute-angle intersections which threw many parcels of land into streets or small triangular parks, since they could not be used for buildings. The radial system has made it easier for Washington to be successfully adapted to motor traffic. However, with all the advantages above mentioned, although the presence of wide streets and radial thoroughfares may have postponed, they have not prevented the traffic problems with which Washington is faced today.

The present congestion of traffic apparently rests upon two major factors. (1) Washington's growth has taken place largely in the Northwest section, causing an unbalanced distribution of the population in relation to the symmetrical plan. Reasons for this inefficient distribution are not hard to find. Originally, Tiber Creek and the low areas south of it and later the Potomac and Anacostia Rivers have formed effective physical barriers to the spread of population to the east and south. Even yet, there is relatively little development south of the Anacostia, and areas west of the Potomac have long been occupied by the large permanent open spaces of Arlington Cemetery and Fort Myer. To the east of the Capitol, the early growth contemplated by L'Enfant did not take place, because the land was held speculatively at so high a price that growth moved to cheaper land in other quarters. (2) The primary cause of congestion, however, has been the gradual growth and concentration of the executive offices. Around the Executive Mansion there grew up, in general location correctly, in detailed adjustment to the roads unfortu-

nately, first the Treasury Building, then the State, War, and Navy Building. Later, the Interior Building arose in a somewhat less appropriate place. The great congestion, however, which is not yet at its peak, is caused by the Department of Commerce building and the "Triangle Group," a degree of concentration unforeseen, unnecessary, and not well related to many main streets of access. Also, on the opposite side of the Mall is the recently expanded Department of Agriculture group and the Bureau of Printing and Engraving, to which many employees come from the northwestern suburbs through the already crowded area north of the Mall. As a result, the vicinity of Fourteenth Street and the Mall has become the center of the governmental concentration and traffic congestion. To this concentration must be added that of the central business district immediately north of the Mall. Although L'Enfant mentions the location of the "three grand Departments of State contiguous to the principal palace [White House]," his emphasis upon evenly diffused distribution and the selection of dominant sites for public edifices hardly warrants the assumption that he would have subscribed to a policy of concentration ill-related to the street plan. Although he did not indicate the location of the executive offices on his plan, the distribution of his dominant centers is clearly shown, entirely consistent with the policy of diffused development. L'Enfant was also much interested in maintaining the equitable value of lots to be sold to private purchasers by the simultaneous development of his centers. Had he foreseen the possibility of the very great growth of the executive branch of government in comparison with the legislative and judicial branches, he would presumably have made some provision other than the continued pyramiding of offices adjacent to the Executive Mansion.

The factors which have so far been mentioned have resulted largely from the original plan or from subsequent misinterpretations of it. Several very serious problems have arisen from the total disregard of the plan. During the period from 1800 to 1850, the plan was gradually forgotten. In 1839, the building for the Department of the Treasury was begun in the bed of Pennsylvania Avenue at Fifteenth Street, NW., both blocking the view between the White House and the Capitol and creating a bad street relationship which produces today a difficult traffic situation. The State, War, and Navy Building has effectively blocked the opposite White House vista. The Library of Congress was likewise located in the bed of Pennsylvania Avenue at First Street, SE., blocking that vista of the Capitol. In addition, the greater part of Virginia Avenue has been devoted to railroad right-of-way, thus destroying not only vehicular movement along this street but also the site originally designated by L'Enfant for the city hall. The location of the Baltimore & Potomac Railroad right-of-way in the Mall area was perhaps the most flagrant violation of the plan and created a difficult problem in the Mall restoration. Mr. Partridge found in 1930 that 21 features of the L'Enfant plan, more or less important, had been lost, including city entrances, monumental columns, state squares, and fountains. Some of these features may still be carried out, but many are no longer possible due to the changes occurring in the Ellicott plan and to subsequent disregard of both plans.

*The District Outside the L'Enfant Plan.*—A further difficulty, due less to specific disregard of the L'Enfant plan than to disregard of any comprehensive planning, has been the unregulated growth which took place immediately after the Civil War, at the time when the original plan was becoming completely filled, and continued to about 1893. The National Capital Park and Planning Commission says [5] of this period:

> The dark days of the Capital City, as far as its circulation system is concerned, were those during which, outside the city planned by L'Enfant, streets were dedicated without reference to any comprehensive plan. This period was from about 1866 to 1893. The lack of authority to enforce a plan allowed landowners insensible to the superior qualities of the L'Enfant scheme to do as they pleased. Sixteenth Street was blocked at Florida Avenue, just as Seventeenth is today. Vermont, Connecticut, New Jersey, New Hampshire, North Carolina, and Tennessee Avenues were ignored. Widths of important streets were reduced and a method of land subdivision wholly out of keeping with a capital city came into vogue.

From L'Enfant's writings, there seems no doubt that he never considered the boundary of his plan as the ultimate limit of the city, but he had carried his type of planning as far as it applied topographically and as far as was then necessary. The creation of the Highway Commission in 1893 was an attempt to extend the L'Enfant plan. Laudable as were its efforts, it failed to recognize one of the principles most emphasized by L'Enfant, namely, the regard for topography. A mechanical pattern of gridiron blocks and radials was continued to the District line. This plan, made effective in 1898, prevented further unrelated development and carried with it the power to control future platting of land. However, its disregard for the rugged topography of much of the District in contrast with that of the original city demanded excessive cuts and fills and destroyed much of the natural beauty of the areas in which it was carried out.

*The McMillan Commission Plan.*—The first consistent attempt to return to the L'Enfant conception of Washington and to new developments consistent with it under modern conditions is to be found in the resolution of the Senate, March 8, 1901, which stated:

> That the Committee on the District of Columbia be, and it is hereby, directed to consider the subject and report to the

[5] In its *Annual Report*, 1928, p. 10.

Senate plans for the development and improvement of the entire park system of the District of Columbia. For the purpose of preparing such plans the committee may sit during the recess of Congress, and may secure the services of such experts as may be necessary for a proper consideration of the subject * * *.

The objective stated by the Commission in tendering its report in 1902 was "to prepare for the city of Washington such a plan as shall enable future development to proceed along the lines originally planned—namely, the treatment of the city as a work of civic art—and to develop the outlying parks as portions of a single, well-considered system." From this, it will be seen that the Commission found it necessary to approach broadly the objectives mentioned in the Senate resolution. Among the major recommendations contained in the report are two which directly affected the original plan of L'Enfant: the restoring and supplementing of the Mall system and the relation between the Capitol and the White House, and the grouping of the buildings for the executive departments. In relation to the changed conditions found in the Mall, the Commission states:

At the point of intersection of two lines, one drawn through the center of the Capitol, the other drawn through the center of the White House, L'Enfant fixed the site of an equestrian statue of General Washington, one of the numerous statues voted by the Continental Congress but never erected.

When, in 1848, the people began to build the Washington Monument, the engineers despaired of securing on the proper site a foundation sufficient for so great a structure; and consequently the Monument was located out of all relations with the buildings which it was intended to tie together in a single composition. To create these relations as originally planned was one of the chief problems of the Commission.

Again, the reclamation of the Potomac Flats, prosecuted since 1882, has added to the Monument grounds an area about 1 mile in length from east to west; so that where L'Enfant dealt with a composition 1½ miles in length, the Commission is called upon to deal with an area 2½ miles long, with a maximum breadth of about 1 mile.

The second recommendation is of considerable interest as it marks a restatement of the objectives of L'Enfant which have now for the second time been partially ignored. The Commission summarized its recommendations regarding the location of public buildings as follows:

First. That only public buildings should face the grounds of the Capitol.

Second. That new Department buildings may well be located so as to face Lafayette square (north of the White House).

Third. Buildings of a semipublic character may be located south of the present Corcoran Art Gallery, fronting on the White Lot and extending to the park limits.

Fourth. That the northern side of the Mall may properly be used by museum and other buildings containing collections in which the public generally is interested, but not by Department buildings.

Fifth. That the space between Pennsylvania avenue and the Mall should be occupied by the District building, the Hall of Records, a modern market, an armory for the District militia, and structures of like character (the present location of the Triangle group).

Had recommendations two and five been carried out, the executive group would thus have been distributed about a focal point in a manner similar to that partly carried out around the Capitol, the concentration would have been directly served by thoroughfares radiating in all directions rather than in the inadequate manner in which the Triangle group is now served. This was L'Enfant's primary object in providing the radials. Before the Triangle group was erected, the National Capital Park and Planning Commission made recommendations that the group should be designed as far as possible so as to handle within itself the parking congestion of motor cars which it would cause. This provision was not carried out, however, with the result that the group has caused not only a difficult problem of car movement because of its indirect relation to the radial thoroughfares which should have served it, but has aggravated an already serious parking problem, both in relation to itself and to the adjacent business district.

Recommendations of the McMillan Commission which have been carried out include the extension of the Mall axis to the Lincoln Memorial, the reflecting basin, the reconstruction of the Mall, the Memorial Bridge to Arlington, the Rock Creek and Potomac Parkways, the Mount Vernon Memorial Highway, the Plaza at the foot of Capitol Hill, Anacostia Park, parts of Fort Drive, and the railway terminal near the Capitol.

Five steps toward comprehensive planning of the District of Columbia have been made since the McMillan Report of 1902. The first step was the restoration of a maximum building height limit in the District, based upon the width of adjacent streets. Washington had, at the beginning, established a 45-foot limit, which had been suspended in 1822.

The second step was the creation in 1910 of the Commission of Fine Arts, which was charged with the approval of all monuments and Government buildings to be erected in Washington and which acted in an advisory capacity on general matters relating to esthetics. The Commission's powers were amended by the Shipstead-Luce Act in 1930 to include control over the appearance of private structures to be erected adjacent to certain governmental areas.

The third step was the creation in 1920 of a Zoning Commission and a comprehensive zoning ordinance. This ordinance is now antiquated and inefficient in several respects, and it is hoped that it may soon be amended.

The fourth step was the creation in 1924 of the National Capital Park Commission with authority to purchase park land and to preserve certain natural features within the District.

It will be noted, however, that all of these commissions and regulations were primarily concerned with certain details of the plan of Washington, and no one agency existed which was charged with the problem of correlating the work of these and other agencies into a comprehensive scheme. This lack of coördination and the realization that, in the case of the Park Commission, an intelligent choice of park areas could not be made without relating them as a system to the conception of the city as a whole, led to its enlargement in 1926 into the National Capital Park and Planning Commission, which fell heir to the powers and duties of several previous bodies at that time superseded. As stated in the Commission's Report of 1928:

* * * there was no agency for coordinating various conflicting developments, it seemed essential to establish some such agency and this necessity was met by the act of April 30, 1926, which amended the previous act and increased the personnel of the commission and the scope of its duties, making of the enlarged commission a National Capital Park and Planning Commission.

This Commission is charged "with the duty of preparing, developing, and maintaining a comprehensive, consistent, and coordinated plan for the National Capital and environs, which plan shall include recommendations to the proper executive authorities as to traffic and transportation; plats and subdivisions; highways, parks, and parkways; school and library sites; playgrounds; drainage, sewerage, and water supply; housing, building, and zoning regulations; public and private buildings; bridges and water fronts; commerce and industry; and other proper elements of city and regional planning."

In addition to assigning these planning duties, the act provided for doing away with the old Highway Commission * * * and conferred its powers and duties upon the new Park and Planning Commission.

The act further stated:

It is the purpose of this act to obtain the maximum amount of cooperation and correlation of effort between the departments, bureaus, and commissions of the Federal and District Governments. To this end plans and records, or copies thereof, shall be made available to the National Capital Park and Planning Commission when requested. The Commission may, as to the environs of the District of Columbia, act in conjunction and cooperation with such representatives of the States of Maryland and Virginia as may be designated by such States for this purpose * * *

Careful study of the duties with which the commission is charged by law shows that they may be classified as follows:

(*a*) Regional planning, including the suburban areas in the States of Maryland and Virginia.

(*b*) City planning within the limits of the District of Columbia.

(*c*) Administrative duties of the old highway commission in regard to the street plan of Washington.

(*d*) Purchase of property for parks, parkways, and playgrounds.

Manifestly the value of the results obtained under (*a*) must depend upon the arrangements it is possible to make with the authorities of the adjacent regions of Maryland and Virginia. In this as well as in (*b*), the commission has only advisory powers, while in (*c*) and (*d*) some authority is given to it by which to help execute the plans made.

Thus, for the first time since L'Enfant began to put his plan upon the ground, a single agency was created, charged as an official advisory body not only with the coordinated development of Washington and the District, but with relating that development to the nature and growth of the surrounding region. In 1930 the Regional Plan of Washington and its Environs was presented by the National Capital Park and Planning Commission, marking the fourth of four progressive plans—The L'Enfant Plan of the original city, the Highway Commission Plan of the District, the McMillan Plan, and the Regional Plan just mentioned.

The accomplishments of the National Capital Park and Planning Commission during its 10 years of existence illustrate without question the value, not only of a *coordinating* agency, but of a *continuing* agency to which is entrusted the preparation and development of a comprehensive plan, and the duty of seeing that it is considered in every change of conditions. Throughout this present study over the whole country, the importance of such an agency, whatever its form, to the success of an original conception or objective has been very evident. An unchanging *plan* may be partly a liability to a city. An unchanging comprehensive conception, flexibly applied to successive new conditions, is among the greatest of assets. In all of its work, the Commission has very carefully considered, when they applied, the recommendations laid down by the McMillan Commission, which, in turn, endeavored to follow the conception originated by L'Enfant. Thus, the present planning of Washington has its roots strongly set in the past. Our present mode of living, however, is vastly different from that L'Enfant knew, and the present city is larger and richer even than L'Enfant's magnificent dreams. There will always be need of vigilance to defend the gains of the past, but equally of creative imagination like L'Enfant's to provide for the needs of the future.

## COMMUNITIES DEVELOPED BY REAL ESTATE AGENCIES

### Separate Communities

**Riverside, Cook County, Ill.**

A development by the Riverside Improvement Co. Original general plan dated 1869. Town planner, Olmsted, Vaux & Co., landscape architects.

*Location.*—The site, comprising 1,600 acres of land, was located 9 miles east and slightly south of the business center of Chicago. Though on the main double-track line of the Chicago, Burlington & Quincy Railroad, it lacked any other adequate transportation

facilities in its early days. Olmsted, Vaux & Co. in their "Preliminary Report Upon the Proposed Suburban Village at Riverside, near Chicago," dated September 1, 1868, interestingly said:

> We find that the surface of the country over which a drive must be taken to reach your property, examined with reference to this requirement, is like the country generally about Chicago, not merely uninteresting, but, during much of the year, positively dreary. Driving across it, at present, so far from being a diversion or matter of pleasure, is a tedious task. Being nearly a dead flat, its natural drainage is very bad, parts of it are marshy, and the whole, after storms, is miry, and remains for a long time half covered with broad mud puddles. Since railroads were established, the intercourse between the town and country, in this direction, by ordinary-wheeled vehicles, has been so slight that the old roads, which were never tolerably well-made, are scarcely kept in sufficiently good order to be traveled safely, even by very strong and heavy wagons. In their best condition they are extremely rough, and require slow and cautious driving, while in the spring they are sometimes quite impassable.
>
> It is obvious that no ordinary arrangement will suffice to make a rapid drive in a light carriage, or a canter on horseback, over this region, one that can be daily taken with pleasure throughout the year, or to prevent the attempt to secure exercise and recreation in this way from becoming an intolerably tedious effort on the part of any suburban resident who wishes to attend to business in town.

The property extended a distance of 2 miles along the banks of the Des Plaines River. Portions of it were at a somewhat higher elevation than any point nearer Chicago. The more elevated parts and the banks of the river were covered by groves of oaks, elms, hickories, walnuts, sycamore, and ash, and scattered undergrowth of hazels and other shrubs. The river at that time was said to be very clear and abounding with fish and wild fowl.

*The Plan.*—The curvilinear street system of Riverside is one characteristic that sets it apart from the adjacent gridiron street pattern of greater Chicago. From the railroad station, a thoroughfare leads northeast by way of a long common to the boundary of Riverside where it was to continue on a proposed parkway to the city limits of Chicago, 6½ miles away. To the north of the railroad, a large park area was set aside extending along both sides of the Des Plaines River. A long narrow parkway extends along the rest of the river and a tributary stream that flows along the western boundary of the property. It was estimated in a "Prospectus of the Riverside Improvement Enterprise" that the 1,600 acres would produce, after deducting the area for streets, alleys, parks, etc., 4,500 lots of sufficient depth and with 100 feet of frontage. The development is of interest because of its success in maintaining its original character. Howard K. Menhinick, visiting Riverside in 1931, states in his article "Riverside Sixty Years Later":[6]

> The individual characteristics which mark Riverside so distinctly from surrounding territory that one can tell almost the instant he crosses the village boundary line are the irregular street pattern and the large amount of open space, both in public reservations and in private holdings about the homes. In prairie country characterized by an absence of trees, the village has all the fine trees and shrubs that one might expect in a well-wooded section. With practically no exceptions they have been planted by man. Billboards are absent and there is no intermingling of commercial and residential uses. Business is centralized in a local shopping center adjoining the railroad station. With the exception of a few apartment houses of recent origin, the number of which could be counted on the fingers of one hand, Riverside is a village of single-family homes.
>
> . . . there are two classes of people in Riverside—the old residents and the so-called newcomers. In some respects they are separated by a gulf, but in their satisfaction in living in an attractive village and in their willingness to fight to preserve it they are firmly united.
>
> . . . There have been many opportunities for the ideals of Frederick Law Olmsted, as incorporated in his plan of 1869, to "go by the board." Yet a comparison of his proposed plan with that of present-day Riverside will demonstrate that his plan has been carried out in astonishing detail. Not only have the streets, lots, and areas been laid out in general as he planned them, but even the names of streets are the names shown on his original plan.

There have been attempts to erect buildings upon Long Common, but all have been defeated. As early as 1869, there were plans to set a private house in the midst of the Common against which Mr. Olmsted vigorously protested. Some of the land designated as park area along the river was later subdivided into lots, most of which were never built upon. Fortunately, these areas today are being reconverted to park purposes as part of the Cook County Forest Preserve System. One feature in the Olmsted-Vaux plan that, unfortunately, never materialized was the parkway that was to connect Riverside with Chicago. At one time it was estimated that this would require but 80 working days to complete. Today, the community lacks an easy attractive highway to downtown Chicago.

Certain destructive forces threatening residential values in Riverside are strong today. One is a threatened invasion of apartment houses. Another is the close proximity of the new Chicago Zoological Gardens at the western boundary of Riverside, which will undoubtedly attract crowds and automobile traffic.

Present control of the development is discussed later.

## Suburban Communities

### Country Club District, Kansas City, Mo.

Started in 1906 and gradually developed and extended by the J. C. Nichols Investment Co. Within the corporate limits of Kansas City and adjoining area and portions in Johnson County, Kans. Population in 1936, approximately 25,000. Town planners, Hare & Hare. Architect, E. W. Tanner.

[6] *Landscape Architecture*, January 1932.

*Location.*—The Country Club District is located in an area extending from 3 to 5 miles south and west of the central district of Kansas City. The north and east periphery of Kansas City is surrounded by an extensive industrial belt which tended to encourage the residential growth toward the southwest. The establishment of the district in this section acted further to redirect the city's residential growth. The district has grown by accretion, from one 10-acre tract, purchased in 1906, to about 4,000 acres in 1936, 2,500 acres of which have been developed.

*The Plan.*—The district comprises an integrated development of some 16 subdivisions which have been developed over a period of 30 years. The principal structure of the plan is formed by the main arteries of Ward Parkway and Brookside Boulevard, which converge at what is known as the Country Club Plaza or central business district and connect with Mill Creek Parkway and Broadway, which lead to the heart of Kansas City. Secondary cross-thoroughfares outline residential areas of from about 200 to 400 acres. Business development has been limited to the plaza at the northern boundary of the district and to small local shops located at the intersections of the major and secondary streets. Within the framework of thoroughfares, the local streets have followed a modified gridiron pattern, with the exception of such areas as Mission Hills and Indian Hills over the Kansas state line, which have adhered to topographical conditions. Natural features have been preserved through the district.

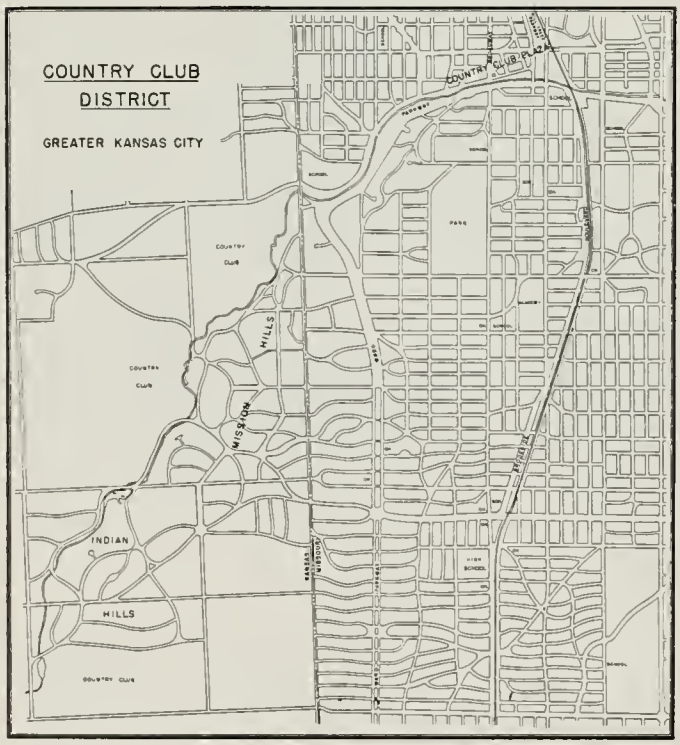



FIGURE 22.—Existing conditions

There has been a tendency in later subdivisions to lengthen the blocks. Previously, between 25 and 30 percent of the area in the residential districts was devoted to streets. This has now been reduced through the use of longer blocks to well under 25 percent. In the shopping centers, approximately 40 percent of the area has been devoted to streets. A desire has been expressed for wider roadway paving, and more space in the planting strip for trees.

*Housing.*—The Country Club district now contains between 6,000 and 6,500 houses. The entire development is restricted to detached single-family housing, with the exception of about 100 apartment units at the entrance to the district and a small section set aside for duplex housing. None of the latter type have been built in recent years, however. Recent housing has been entirely detached single-family dwellings selling for from $7,500 to $47,500. The high percentage of home ownership may be attributed to the predominance of single-family housing and the relatively high-income groups. At present, the company rents about 5 percent of the homes, while 10 percent are rented by individual landlords. Lot sizes vary from a minimum of 50-foot frontage to 5- and 10-acre estates which have been carefully graduated in size. The opinion has been expressed that slightly larger lots with a minimum of 55- to 60-foot frontage are desirable.

The entire development is covered by comprehensive deed restrictions which include the control of land use, minimum cost of dwellings, set-back lines, building projections, free space, outbuildings, billboards, and racial restrictions. According to J. C. Nichols, the Country Club district is the first development in the United States to make use of self-perpetuating restrictions which typically run for a period of 25 years with automatic renewals for successive 25-year periods unless released by the owners in fee simple of the majority of front footage in the subdivision covered, 5 years prior to the expiration date of the initial or succeeding 25-year periods.

Mr. Nichols says of the restrictions and the stability of property values in a letter dated April 25, 1936:

> We have succeeded fairly well in stabilizing residential values. We have areas built 25 years ago that are still desirable and hold their prestige, although the obsolescence in home design and the great use of mechanical equipment in homes is making it very difficult to maintain the desirability of the older sections.
>
> Of course, we retain the right to approve all architectural plans and carry a very large expense in upholding our restrictions. We make a careful study of every site before we approve the plan of the home to be built thereon. We have always done a large amount of building of homes ourselves, having built homes all the way from $5,000 to $100,000; however, the major part of the homes in our district have been built by others to whom we have sold the land.

The normal terms of sale which have been used in the district consist of a cash payment of 10 to 20 percent, with a first mortgage extending for a 20-year period representing 65 percent of the purchase price, the balance paid over a period of 72 months at the rate of $17 per $1,000 per month, including 6-percent interest.

*Community Facilities.*—The district at present includes 11 schools, 11 churches, 8 shopping centers, and some 200 small parks. In addition, there are four 18-hole golf courses. Additional community interest has been stimulated by the company, which has provided for the free circulation of book reviews, bridge lessons, and lectures on subjects of community interest, including cooking, interior decorating, landscape architecture, and so forth.

As already noted, the local and central business areas have been located at the periphery of what are essentially modified neighborhood units, although they have not been completely developed as such.

*Control.*—An interesting arrangement relating to that portion of the district which lies in the State of Kansas may be mentioned here. The portion which lies in Missouri has its fire and police protection, traffic regulation, and street repairs under the jurisdiction of Kansas City. The unincorporated portion in Kansas has an agreement with the Kansas City, Mo., and Kansas City, Kans., fire departments. The homes associations in Kansas, however, maintain a fire station and the repair of streets, while police protection is afforded by the sheriff of Johnson County.

The formation and functions of the homes associations as operated in the district are set forth in the declaration from the Armour Hills Association dated July 19, 1922, from which the following excerpts are taken, as an example of this type of administration:

> Whereas, The J. C. Nichols Investment Co. is now developing said Armour Hills for high-class residence purposes, and it is its desire to continue the development and use of such land for such purposes, and for the creation and maintenance of a residence neighborhood possessing features of more than ordinary value to a residence community, and
>
> Whereas, in order to assist it, and its grantees in providing the necessary means to better enable it and its grantees to bring this about, the J. C. Nichols Investment Co. does, now, and hereby, subject all of the lots in Armour Hills to the following covenants, charges, and assessments: . . .
>
> All public improvements upon and to the land in district of improvements in public places shall be under the management and control of the Armour Hills Homes Association, as trustee; an association to be composed of the owners of the real estate in said district, which association may or may not be incorporated as the members thereof may hereafter provide. But whether it is incorporated or not, it is understood and agreed that the members of said association shall be limited to the owners of land within the boundaries of said district as it exists from time to time. It is provided, however, that such management and control of said improvements shall at all times be subject to that had, and exercised, by Kansas City, by Jackson County, and by the State of Missouri, or any of them. And in addition thereto, it shall have further powers and duties as are hereinafter set forth, all of which may be exercised or assumed at the discretion of the association.

The duties of the homes associations in general include the enforcement of restrictions, removal of snow from sidewalks and streets, care of trees, shrubs, and so forth, in streets and parks, upkeep of vacant property, provision of necessary public lighting, disposal of rubbish, maintenance of recreational areas and ornamental features, and the right to collect assessments and enforce payment. Mr. Nichols says of the homes associations:

> We have always laid great stress upon the creation of a good residential morale, giving the same care and attention to areas long since sold out as we do to our new properties. Our district is divided into 16 homes associations each having 5 directors elected for a period of 2 years, with charters from the State to carry on maintenance matters not provided by the city, and the right to levy tax of a maximum of 1 to 2 mills per square foot. A large part of our property is on the Kansas side outside of any incorporated district where we handle all the street lighting; running a fire department and all other ordinary municipal matters.

*General Considerations.*—The population of the district is made up entirely of clerical and professional groups, the former representing about 75 percent of the total. Various provisions which add to the desirability of the district are to be found. Over $250,000 has been spent in erecting objects of art throughout the district. The company has built two street car lines into the development and at present operates three bus lines. The company also operates its own nursery, planing mill, quarries, blacksmith and repair shop, and commissary in order to lower costs of construction and maintenance. One of the largest items of expense has been incurred in protecting the edges of the development. Mr. Nichols states:

> The biggest load we have had is to keep buying land on our borders in order to protect our holdings. We find that restrictions on small areas give very little protection over a period of years.

Roland Park and the Country Club District are perhaps the finest examples of integrated large-scale suburban real estate development to be found in the United States. In both cases, planning has been comprehensive in a real sense, and the value of a continuing policy over a considerable period of years has been fully tested.

**Palos Verdes Estates, Los Angeles County, Calif.**

Established in 1923 and developed by the Vanderlip Syndicate and others. Layout, general design, and protective restrictions by Olmsted Bros., landscape architects and directors of planning. Charles H. Cheney, consultant in city planning. Population in 1936, about 800.

Palos Verdes Estates is considered to be one of the best-planned and most carefully restricted real estate

developments in the country. In theory, Palos Verdes was conceived not as a self-sufficient community but as part suburban. Mr. F. L. Olmsted states, "In a large part also it would be an independent residential community for people not tied to the necessity of daily work in the city." He further states the principles upon which the development was founded:

> The human requirements were simply to provide for the pleasantest possible dwelling-places, * * * and to avoid everything that would not contribute to the comforts and amenities of life, so far as such alien things could by foresight and ingenuity be avoided. The houses to be provided for were conceived as ranging from the inexpensive to the palatial; but predominantly for fairly prosperous people wanting detached houses with a garden setting but unwilling to burden themselves with the care of extensive grounds—predominantly people who would want lots ranging from about 60 by 125 feet to an acre or so in extent.

Highly detailed restrictive covenants were based upon the two following principles:

1. The success of the whole depends upon the harmony of all its parts;
2. Inventiveness and imagination of many individuals must be given as great a scope as is consistent with this harmony, to avoid monotonous and stereotyped quality in the whole.

Mr. Olmsted has given the following statement on the financial and administrative organization of the project as follows:

> The capital with which the project acquired its 3,200 acres of land and undertook active development was derived from a very large number of people who subscribed, in widely varying individual amounts, for two kinds of securities, called "Convertible notes" and "Nonconvertible notes," aggregating approximately $9,000,000 par value (although the amount of capital finally paid in by the subscribers proved to be only about two-thirds of that amount). The subscriptions for notes were made under the terms of a very elaborate and detailed trust indenture, which defined the purposes of the undertaking and many of the methods and safeguards to be used in pursuing them, and which vested responsibility and power for controlling the property and its management, subject to the terms of the trust, in a designated Los Angeles Bank as trustee for the noteholders. Subscribers deposited with the trustee a small initial payment on account of each note and obligated themselves to pay in the balance of the par value of their notes in successive installments. The trustee was obligated to distribute the net earnings from sales and other sources, from time to time in its best judgment, *pro rata* to holders of outstanding paid-up notes of both classes until all of the salable land should have been disposed of, and the rest of the land, embraced in streets, parks, playgrounds, school sites, and other areas for the general benefit of the community, conveyed to permanent agencies, governmental and contractual for administration on behalf of the community as provided in the trust indenture.
>
> Owners of paid-up convertible notes, however, had the privilege, instead of retaining their notes and participating in the speculative financial returns from the enterprise as a whole, of exchanging their paid-up notes at par for any salable land in the project which they might select at the *cost price* of such land as estimated by the trustee, this cost price being determined by apportioning the estimated total capital investment, in land, improvements, and other costs, proportionately to the appraised market values of all the various parcels not reserved for the community use—a method of obtaining lots, with the community facilities appertaining to them, on a basis analogous to that of a consumers' cooperative. Many did so convert their notes into personally-owned lots, often primarily for personal use, but sometimes primarily for speculative resale.
>
> A budget for the entire operation was worked out covering all prospective costs for the land, for the complete development thereof proposed to be done by the trustee, and for the marketing of the product, including of course, carrying charges and all overhead and incidental costs over a long period, to be financed within the limits of the capital subscribed.

*Location.*—The area covered by Palos Verdes Estates is an undivided remnant of the Rancho de Los Palos Verdes of the Mexican era, located 23 miles southwest of central Los Angeles. The topography and climatic conditions are favorable to residential development. The site is on a promontory overlooking the Pacific Ocean. There are constant southwest winds with a mild climate. The promontory forms a "bold isolated mass, rising tier above tier to nearly 1,500 feet above the base of the cliffs which mark a projecting knuckle in the coast of California at the southwest corner of the Los Angeles plain."

The hills are of limestone shale with the surface soil of adobe broken by outcrops. Successive uplifts of land have left wide sloping terraces carved by the sea and separated by steep declivities. The land rises thus from the present seaside cliffs, 60 to 300 feet above the sea in a series of benches.

*The Plan.*—The plan has taken every advantage of the topography of rolling hills and terraces. The street pattern is comprised of a curvilinear system of major highways, secondary, and minor streets. Street locations were established with regard to topography, their effect on abutting property, and storm drainage. Where small lots were laid out, the size and shape of the blocks and economy were determining factors. Where the topography was irregular and the value of sites rested upon views and features, the sites were selected first regardless of street pattern and the streets were then located afterward. Streets on hillsides have sidewalk space on the downhill side only.

Of the 16,000 acres originally contemplated for development, only 3,225 acres were under development in 1927. The ultimate plan of 16,000 acres was designed to accommodate 160,000 persons. The 3,225 acres under development contained four principal town sites about 3 miles apart, each containing districts for business and for apartments.

Of the entire area, 25 percent is established in community parks, playgrounds, golf course, 4½ miles of seashore, swimming club and pool, bridle paths, and so forth. Over 750 acres are owned by the community

association in which every lot holds a share. Twenty-five percent of the entire area is established in public streets, plazas, and street open spaces. Fifty percent of the entire area is subdivided into 5,200 lots, about half of which have 60 to 80 feet frontage (8,000 to 12,000 square feet in area); the balance being subdivided into one-quarter-acre to two-acre tracts. The average net density for the entire area is three families per acre.

The program for establishing public schools and playgrounds was as follows:

1. 10-acre elementary school site, playground, and park, every mile across the area (seven are established and deeded, two schools are built).
2. 25-acre Junior High School site, playfields, and park, every two miles (two established and deeded).
3. 40-acre Senior High School site, playfields, and stadium and park, every 3 miles (one established and deeded).

*Government.*—The protective restrictions have been referred to as the most complete in America. They include comprehensive zoning regulations on use, height, and area. In detail, the restrictions cover the following general headings: Building height limits; type of architecture; minimum cost of buildings; building setback lines; building side and rear lot lines; variation in setbacks; privies and cesspools; easements and rights-of-way; burning of refuse without permit; title to streets reserved; maintaining natural drainage; insect pests and plant diseases; duration of restrictions; modifications of restrictions; records and reports; annexation of additional property; reversion of title; violation of conditions; violation constitutes nuisance; construction and validity of restrictions; assignment of powers; interpretation and enforcement; right to enforce; and exceptions. All restrictions are in force to 1960 and are automatically extended for 20-year periods after 1960 unless changed by the approval of owners of two-thirds of the area within 300 feet of the proposed change and by the homes association.

About 90 percent of all lots are restricted to detached single-family dwellings.

Architectural control of private improvements other than plazas is effected by the approval of plans by a permanent art jury. Business blocks around plazas are required to be built in accordance with a preliminary architectural design.

The art jury is composed of 6 members appointed by the Commonwealth Trust Co. which also names one ex officio member. Three members are persons engaged in the practice of fine arts and must be chosen from a list of persons nominated by the board of directors of the Southern California Chapter of the American Institute of Architects. One member must be a city planner chosen from a list of three city planners nominated by the board of governors of the American City Planning Institute. One member is appointed from a list of three persons nominated by the governing board of the University of California, Southern Branch. And one member is appointed from a list of three persons nominated by the board of directors of the homes association. The six members are appointed for overlapping terms of 3 years each.

According to the Bylaws of the Palos Verdes Homes Association:

> No part of the said property * * * shall be subdivided, laid out or improved by street work, buildings, structures, landscaping or planting, or its physical contours cut into, altered or changed, or any premises maintained except with the approval of the art jury * * *. No building, fence, wall, sidewalk, steps, awning, tent, pole or other structure, improvement, utility, parking, sculpture or planting can be erected or maintained unless plans and specifications, including the exterior color scheme is approved in writing by the art jury.

The art jury is further the custodian of such works of art as it may accept charge of, and no work of art can become the property of the Commonwealth Trust Co., Palos Verdes Homes Association, or any corporation, organization, or public or semipublic board that may succeed them unless such work of art is first submitted to and approved in writing by the art jury.

Mr. Charles H. Cheney states:

> By tactful administration of the art jury and community association, splendid cooperation has been obtained from architects, builders, and property owners, so that the whole of Palos Verdes Estates is uniquely restful and harmonious, without distressingly jarring notes, and with a high percentage of distinguished architecture and landscaping.

Mr. Cheney writes that from January 1, 1936, to October 22, 1936, 58 houses have been approved by the art jury.

To carry on the common interest and look after the maintenance of all lots and the welfare of all lot owners, a nonstock, nonprofit body has been incorporated under the laws of California. Every building site has one vote running with the land. According to the homes association bylaws, this body has the sole authority:

> To fix and establish annually the amount of such annual charge or assessment on each and every lot or parcel of real property or any interest therein, subject to a continuous lien which shall be based on the assessed valuation of real property as established by the county assessor * * * at a rate never in 1 year in excess of the total annual tax rate established for all purposes for the current fiscal year by the city council for the old city of Los Angeles.

The homes association is comparable to the usual town and city governing body, and it enjoys the added advantage of a carefully worked out general plan for the protection, maintenance, improvement, and de-

velopment of its property. The association has the power to perform any of the following functions:

Maintain, purchase, construct, own and dispose of parks, open spaces, and recreation areas.

Improve, light, and maintain streets, roads, alleys.

Maintain, purchase, construct, and operate a waterworks system.

Construct and maintain a sewer system.

Care for any lots and plots in the property.

Provide cleaning and rubbish disposal.

Provide community fire and police protection.

Grant public-utility franchises.

Acquire, operate, or sell real or personal property.

Acquire works of art as approved by art jury.

Create and operate a department of buildings.

Employ a manager, secretaries, etc.

Keep records of building permits.

Enforce liens and charges and enforce restrictions.

Pay taxes levied by any public authority.

Establish a planning board, park board, health board, library board, etc.

Exercise powers of control interpretation and enforcement of restrictions.

Nominate to the proper person or make appointment of members of the art jury.

Receive, preserve, and publish report.

Generally do any and all lawful things advisable.

Borrow money and mortgage its real property.

Exercise control within its powers over streets and alleys.

Care for and plant trees and shrubs on any property over which it may have control.

Care for and plant any vacant or private property it may assume charge of and make reasonable charge therefor.

Erect and maintain adequate signs approved by the art jury.

Make agreements with county, township, state, national, or other public officials in behalf of property owners.

As set up, the homes association has been referred to as a "prime saving factor during depression times."

*Subsequent Development.*—According to Mr. Cheney, about half of the 3,225 acres have been sold, and 200 detached single-family dwellings have been erected, ranging from $3,000 to $150,000 in cost in accordance with price restrictions prevailing in the various sections of the estates. Two public schools have been erected, one at a cost of $82,000 and one at $32,000, each with its own playgrounds. Other community provisions are supplied by an 18-hole golf course and clubhouse, swimming pool and dressing rooms, riding academy, a $90,000 public library and art gallery, and five business buildings housing stores, offices, post office, and public garage. To date, one apartment has been erected.

The assessed valuation of the development per family is something more than $4,000. The average local tax rate for the last 3 years per $100 was $3.20 for county assessments, schools, library, etc., plus $1.65 on land only, for the homes association. The tax rate is based on less than 50 percent of the fair market value for 1935.

Mr. Olmsted has set forth in his statement on the financial and administrative organization of Palos Verdes Estates the financial difficulties experienced some years after its inception. He states the causes of these difficulties and their results as follows:

1. The delinquencies on the part of the subscribers in contributing their agreed shares to the cash capital were much more than had been anticipated. 2. Income from sales was realized more slowly than had been anticipated, both absolutely and, what was even more serious, in relation to the rate of expenditure for development of the property which was found necessary for meeting obligations to purchasers of lots (too widely scattered) and for the stimulation of further sales. To overcome the consequent shortage of working capital a bond issue of some $1,000,000 was then negotiated. Later the effects of the depression of 1929, with its general collapse of the real-estate market, greatly increased the difficulties; and the trustee was unable to meet interest charges on the bonds. Foreclosure proceedings were begun by the bondholders; resulting, after considerable time, in a compromise providing for the reorganization of the project as a corporation, the voting preferred stock of which was exchangeable pro rata for the bonds of the original project and nonvoting common stock for the outstanding notes of the original project, the common stock to receive voting rights and participate in earnings only after the retirement of all the preferred stock with cumulative dividends. That corporation took over from the trustee the unsold land and other assets of the project and its obligations to lot-owners and others, and is now carrying on.

Those who invested in the bonds hope to get their money back. The original investors in notes who did not convert them into personally owned lots in the project are very uncertain as to what the common stock in the new corporation now substituted for such notes may prove ultimately to be worth. The many residents in the community, who obtained lots for actual use by themselves, either at the estimated cost thereof in exchange for convertible notes or by cash purchase at market prices, are in general well pleased with the physical and social conditions and prospects of the community and seem to regard the results in human satisfaction as worth more than the actual cost of producing them, although, like many others who invested in real estate during the 1920's, they find the present prevailing market values of such real estate less than they had hoped for and in many cases less than they paid for it.

An important lesson to be drawn from the experience of this project concerns certain confusion and vacillations in managerial policy growing out of an attempt to serve two essentially different purposes, appealing to motives equally desperate although often mixed in the minds of a single individual; viz, on the one hand the creation by cooperative means of something desired for use by the cooperators, and on the other hand, speculative investment of capital in hopes of a money profit.

*Community Facilities.*—To increase community life, all facilities possible are offered to home owners. Reference has been made to the Palos Verdes Country Club, the Beach Club, and the Riding Club. There are also public tennis courts. Cultural and social pursuits are offered by the Palos Verdes Women's Club. The public library and art gallery is one of the show places of the community. It houses a wide selection of

books, painted murals, and prehistoric fossils. The community arts association maintains month-to-month exhibits of paintings, sculpture, water colors, and so forth.

**Roland Park, Baltimore, Md.**

First unit of Roland Park established in 1891 by the Roland Park Co. within the corporate limits of Baltimore. Population in 1936 of the four sections of Roland Park, Guilford, Homeland, and Northwood, 8,000 to 10,000. Town planners, Olmstead Bros.

Roland Park is herein considered as including the three contiguous sections of Roland Park proper established in 1891, Guilford in 1914, and Homeland in 1924. In addition, a new section adjacent but not contiguous to the first three is Northwood, in which development is just beginning. It will be considered only incidentally in this discussion.

Roland Park was located in the estimated direction of the growth of Baltimore, and on the high rolling and wooded land which was favorable for the type of development planned. The site in 1890 was outside the corporate limits of Baltimore, about 4 miles from the central business district, and segregated from other urban development. It was therefore necessary at that time not only to provide all public utilities by private construction but to inaugurate private transportation service from Baltimore to the site, and to set up some form of community organization.

*The Plan.*—The main thoroughfare structure of the three sections of the plan is formed by York Road on the east boundary, the convergence of Charles Street, Roland Avenue, and University Parkway with St. Paul Street in the interior, and Falls Road on the west, all of which form main traffic and trolley routes to the heart of Baltimore. Roland Avenue and St. Paul Street bisect the Roland Park section and Guilford respectively, while Homeland is free from interior through traffic.

One of the most interesting features of the Roland Park section is in the northern part of the area bounded by Deepdene, Edgevale, and Club Roads, where a series of ridges and valleys has been penetrated by a series of cul-de-sac roads, each following in

FIGURE 23.—Existing conditions

succession the valley or the ridge and creating extremely interesting and varied house sites. This type of layout illustrates the close observance of topography which is characteristic of all three sections of the park.

Perhaps the most significant feature of the plan is the completeness with which the periphery of the three developments has been protected by private open spaces. The Baltimore Country Club occupies almost the entire frontage along Falls Road as well as a section of the Park bounded by Harvest, Hillside, and Goodwood Roads, where the clubhouse is located. The north and east periphery is almost completely protected by large private school sites, while the Roland Park Country School grounds occupy part of the southern boundary. Guilford is protected by the Johns Hopkins University grounds to the south but has no protection along York Road, which is a heavily traveled business street. It is here that the famous high stone wall has been erected. It is set back from the street line far enough to provide shallow business lots fronting on York Road and forms a very effective screen and barrier which adequately protects the residential development within. Guilford and Homeland are separated from each other by additional private open space occupied by a number of large estates and two college campuses. A full appreciation of the value of these physical buffers can be obtained only by observing the effect on the ground.

*Private Restrictions.*—Roland Park was among the pioneers in drawing up detailed private restrictions and providing for the participation of the lot holders in their enforcement and for the machinery for administration of the property under the shifting responsibilities of development company, lot owners, and municipality. Mr. Bouton, Mr. Olmsted, and others worked these restrictions out with much care; they stood the test of the courts, and have served as models for very many later projects.

*Subsequent Development.*—In 1891, the Roland Park Co. was organized under the direction of Mr. Edward H. Bouton and was capitalized at $1,000,000. Two tracts of land were purchased aggregating about 550 acres and were opened for development to meet the estimated market for $10,000 to $25,000 homes.

FIGURE 24.—Stone Wall, York Road, Roland Park

By 1903, 225 houses had been erected in Roland Park section, two-thirds of which were built by the company at a cost of $350,000. Macadam streets were provided ranging in width from 40 to 60 feet with 12-foot park strips which included sidewalks from 3 feet 6 inches to 5 feet in width. Rear service lanes 20 feet wide were provided. A local electric plant and a water-supply system were in operation. Lots were originally laid out with 25-foot frontages with a minimum requirement of two lots for building purposes. Lot depths ranged from 160 to 190 feet. The tendency toward larger lots, however, is shown by the fact that at present the average lot frontage is 75 feet while some lots run as high as 150 feet. The prevailing type of house of this period was of frame construction, ranged from 12 to 14 rooms, and cost around $5,500. Setback lines of 40 to 60 feet were in force, and minimum house costs had been established at $5,000 for homes on Roland Avenue and $3,000 on side streets. A maximum maintenance assessment of 25 cents per front foot per year was applied to the property by the company.

By 1907, one business block at the intersection of Roland Avenue and Upland Road had been constructed. This is extremely interesting, as it is one of the early examples of off-street parking, and varies little from the type of off-street parking recommended at the present time. The group comprises about six store units. By this time, one country school, a private girls' school conducted by the company, four churches, and the country club of about 200 acres with an 18-hole golf course had been established and the latter sold to a club organization. Lots averaged 60 feet for the larger and 40 feet for the smaller types. Seven hundred acres were included within the development, about 300 of which were improved.

In 1909, a roads and maintenance corporation was formed to which the company deeded the roads, service lanes, and sewers, and delegated all administrative powers, including the right to collect maintenance assessments and enforce restrictions. The Roland Park Civic League held the controlling stock.

By 1913, the company found itself with practically the entire Roland Park section sold and a large organization built up which had almost fulfilled its function. A demand for a slightly lower priced development and the desire to continue the organization led to the opening of Guilford in 1914 under similar restrictions. Several changes, however, were introduced. With the coming of the motor car, bituminous macadam replaced the water-bound macadam street. (Later paving has been of concrete.) Electric supply lines were carried

under ground to the interior of the blocks and thence by poles to the houses. Rear service lanes were omitted, and 10 interior private parks were introduced into as many blocks. The following excerpts from the deed and agreement relating to Guilford indicate the method used in providing these parks and the wise provision made for terminating them.

In the interior of each of blocks 8, 11, 17, 25, 26, 32, 39, 41, 47, and 54 on said plat of Guilford an area is shown and designated as a private park, and each of said blocks is hereby sold and conveyed to and shall be held and owned by the purchaser, his heirs and assigns, subject to the express condition that the area therein designated as a private park is hereby reserved, held and set aside as a private park for the sole, exclusive and joint use and benefit in common of the present and future owners and occupants of the block in which each private park is located, and each of said blocks shall be held and owned by the purchaser, his heirs and assigns, subject to all the covenants, agreements, easements, conditions, and charges set out in this subdivision * * *.

The company reserves the right, however, in the interest of all the owners and occupants of land included in each block from time to time to make and enforce reasonable rules and regulations governing the use and enjoyment of each private park by the persons entitled to use and enjoy the same. * * *

2. To the cost of the improvement, maintenance, and upkeep of said park for the common use, benefit, and enjoyment of the owners and occupants of the several lots in said block, the company out of said park fund doing such planting of trees, shrubs, flowers, etc., erecting such structures, making such improvements, furnishing such conveniences, and in general doing such things as it may deem necessary or proper to promote the attractiveness and usefulness of said park, the company exercising its discretion and judgment as to the way in which said fund shall be expended * * *.

2. After January 1st, 1923 (or prior to that date, with the company's consent), the owners of not less than 75 percent of the area of any of said blocks (not counting the part thereof included within the private park) shall have the right to terminate as to such block all the rights, easements, covenants, and the park maintenance charges reserved, given, or created in this subdivision XIII; provided such owners shall join in the making and execution of an instrument in writing, agreeing to such termination, so executed by each of them as to entitle the instrument to be recorded among the land records, and shall present such instrument to the company, together with a certificate from a title company or a title examiner, satisfactory to the company, certifying to the ownership of all the land in such block.

It may be noted that the private parks has fared no better here than at Forest Hills Gardens. Most of them have been abandoned, but about three still remain in existence, largely due to the interest in upkeep of some one person in the block.

The same process was repeated in 1924 when the 391-acre site for Homeland was purchased at $2,300 per acre. Improvements ranged around $3,600 per acre, and the section was opened in 1924, based on a selling price of $50 to $90 per front foot, or $15,000 to $36,000 per acre. Control of Homeland was similar to that of the original sections with provisions for a homes association. Deed restrictions were similar to previous agreements, including nuisances, use of land, setback, free spaces, maximum width of buildings, approval of plans, right to modify, easements reserved, streets and parks, sanitary sewers, maintenance charges, private parks, sewer, maintenance and park charges liens, right to abate violations, right to enforce, and right to extend.

In 1928, about 2,000 houses had been erected in the three sections, which then comprised 1,500 acres. About 250 of these were in the Homeland section. Homeland lots ranged from 60 by 150 feet to 135 by 207 feet in size.

At present, the first section of Northwood, started in 1934, is being developed. The total area of all sections of Roland Park now developed is around 2,000 acres.

A normal sequence has taken place in the course of development of the various sections which is of interest. In general, development has continued to reach a progressively lower income group, starting at the top in the Roland Park section and graduating downward as the upper market has been filled. It will be noted, however, on tables 20 and 22 that it is still in the highest income group of communities studied.

*Housing.*—Housing has been erected both by the Roland Park Co. and by outside contractors and private individuals under the restrictions which have been in force since 1890. Early development was confined largely to frame construction, only 10 percent being of masonry in the Roland Park section. Subsequent development has been 50 percent brick, 25 percent stone, and the balance of frame. Since 1914, according to the company, the cottage type has been popular, with a great demand for brick or stone colonial types. One of the most interesting schemes and also one of the most recent comprises two-house groups just completed on Homeland Avenue near York Road. The groups are similar—one, however, facing on the cul-de-sac, the other on a park walk, both with rear-service lanes. Each consists of about 14 dwelling units arranged symmetrically, and both represent a most attractive type of site planning and of architecture.

Purchase of lots has been carried out on the general plan of down payments of 10 to 15 percent, the balance to be paid over a period of 5 to 11 years. While houses have been sold for as low as 10 percent down payment, sales have averaged between 25 to 30 percent down payment. It has been the experience of the company that prospective purchasers of surburban community property are not interested in living at a distance from the business section except for the advantages of open air and free space, which at once suggested the single-family detached dwelling with adequate yard area.

106099—41——7

*Appearance.*—From the type of plan found at Roland Park and the relatively long period over which the three sections have been developing, it is not to be expected that the degree of unity found at Forest Hills Gardens will be realized here. However, there is a consistent degree of excellence in the disposition and alinement of streets, in landscape treatment, and in attention to detail, with the result that, even though the style and appearance of homes throughout the park vary widely from one section to another and within each section, the effect of development and control under a single continuing organization is distinctly evident and sets the park apart as a more or less distinct unit. Indeed, it might well be contended that, within the limits noted, the variety of house type was an asset in avoiding any possible institutional or theatrical appearance. Here, as at Forest Hills Gardens, the feeling of appropriate scale in the relation of street, park, and parkway planting to roadway widths, and the excellent handling of topography are worthy of study, for the effects achieved are by no means limited to high-cost development. It is a fallacy to consider beauty, scale, form, and alinement as adjuncts only to developments such as Roland Park and Forest Hills Gardens. Indeed, it is often less costly to adhere to the dictates of topography and other natural features, thereby obtaining not only a better looking result but a less expensive one as well.

*Community Facilities.*—Various provisions for community activity have already been mentioned. The country club is, of course, the central feature. While not strictly community facilities, the unique position of the educational and religious institutions in relation to Roland Park should be mentioned once more. Within the park itself, there are three public schools, nine private schools, two colleges, and one seminary, while Johns Hopkins University lies adjacent to the southern boundary. The park also contains one cathedral and a site for a cathedral to be erected in the near future.

*General Considerations.*—According to the company, the cost of streets and utilities has averaged approximately $40 per running foot, half of which is borne by the city and subsequently repaid to the city in part by the payment by the property owners of a paving tax of 15 cents a running foot each year for 10 years.

In regard to the success of Roland Park, the following factors have been of major importance, according to the company:

1. Very limited business development based upon actual needs.
2. Winding roads and the use of park areas, and the strict adherence to a landscape plan.
3. Stability of land use guaranteed by comprehensive restrictions, which are 100 percent in force.
4. To these may be added: consistent long continued policy of administration and development, considering the needs of the lotholders, by a land company which means to continue in business and undertake further projects as time goes on.

Normal vacancies in the park, including homes built for sale, have averaged around 10 percent. At the present time, however, vacancies are less than 1 percent.

## COMMUNITIES DEVELOPED BY PHILANTHROPIC AGENCIES

### Separate Communities

#### Mariemont, Hamilton County, Ohio

Established by the Mariemont Co. (now the Thomas J. Emery Memorial) in 1923. Unincorporated. Population in 1936, 1,600. John Nolen, town planner, Philip W. Foster, associate. Fay, Spofford & Thorndike, engineers. Twenty-six architects of Cincinnati, Boston, New York, and Philadelphia collaborated in house design.

*Location.*—Mariemont lies about 10 miles east of the central business district of Cincinnati, 2 miles from the towns of Norwood and Oakley on the Wooster Pike (U. S. Route 50), and adjacent to the rights of way of the Pennsylvania and the Norfolk & Western Railroads.

According to Mr. John Nolen in his *New Towns for Old*, the conception and objectives of the development follow "in general the example set in the creation of Letchworth and other garden cities in England. Although its establishment is due to an enlightened enthusiasm for doing something worth while, cherished by a public-spirited lady of large means, the project is intended to justify itself along business lines followed with all efficiency. The beneficent aspects are incidental to the practical and business-like basis upon which the enterprise has been projected * * *. Mrs. Emery's attention was first attracted to the desirability of such a project through her experience with extensive industrial undertakings in which she had proprietary interests. She became convinced that workers need primarily to live in comfortable and attractive homes amid a favorable environment if they are to develop a high working efficiency, and that this efficiency is affected by their opportunity to realize their best as human individuals apart from their work."

According to Mr. F. H. Fay, in the *Proceedings of the American Society of Civil Engineers*, October 1926, Mariemont is "intended primarily as a place of

residence for families of widely different economic standing, and especially the wage earners. It does not provide homes for the very poor * * *. Mariemont is an outstanding example of the fact that, with careful planning, and with the savings in cost resulting from large-scale construction, it is possible to provide practical, convenient, and well-made homes, amid ideal surroundings for people of moderate means. It is not a laboratory for sociological experiments in the problem of housing * * *."

*The Plan.*—The area originally planned for development consisted of approximately 365 acres of relatively level farm land occupying an elevated position overlooking the Little Miami River. Mr. Charles J. Livingood, president of the Thomas J. Emery Memorial, states that:

> The total acreage of the project is, in 1936, 485 acres, acquired between 1910 and 1920, some 18 farms: * * * 59 acres of large parks, 250 acres constituting the level tract known as Mariemont; 62 acres, Westover, as an industrial tract; 82 acres of bottomland for playgrounds, including a golf course; with Resthaven, 32 acres, make up the above grand total of 485 acres. The streets and lanes in Mariemont proper, that is, 8½ miles of streets and 1⁷⁄₁₀ miles of lanes, were required to carry out the plan.

The street plan was studied with particular reference to direct circulation from point to point and with regard to the general highway system of the Cincinnati region, the Wooster Pike forming the main thoroughfare connection through the town center with Cincinnati. The town center was planned as the focal point containing a compact business district and is approached by five radial thoroughfares from the various sections of the community. A natural boundary is formed on the south by the line of bluffs which separates the residential section from the railroad rights-of-way and the area reserved for industrial use. No peripheral protection is afforded at other points, however, except where Dogwood Park protects a portion of the western boundary. According to Mr. Nolen, "a feature of the project is a sort of annex to the main plan, with about 25 acres specially provided by Mrs. Emery for the accommodation of pensioners. * * * Here they will be assured restful retirement in pleasant cottage homes of their own. In this section there is to be a hospital, for the benefit of the pensioners, but with

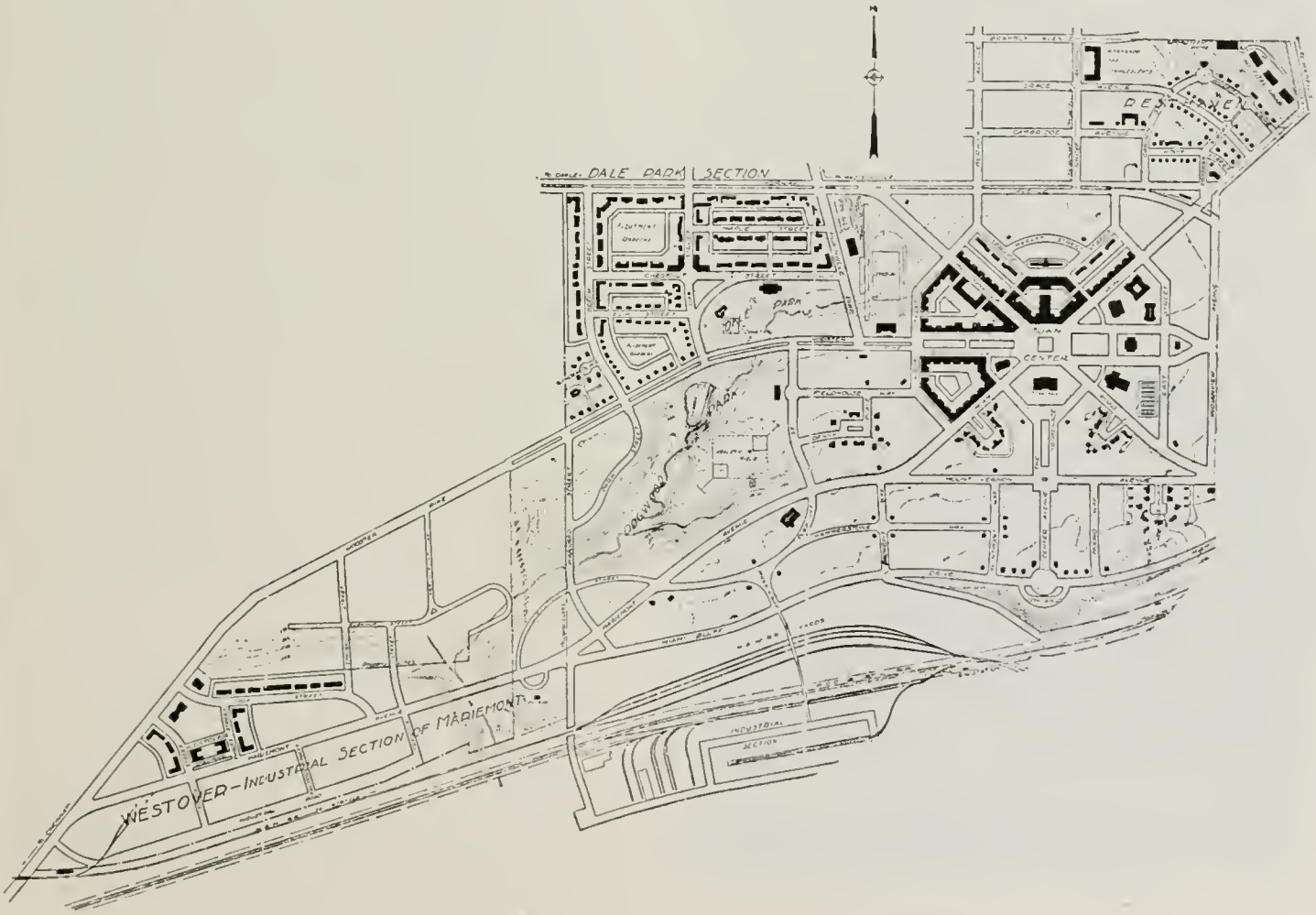



FIGURE 25.—Mariemont, Ohio, as planned and partially developed.

facilities for caring for patients belonging also in Mariemont proper. There will also be a convalescent home and a workshop."

A population of 5,000 persons was planned for, with provision for an ultimate growth to about 10,000 persons. Mr. Livingood makes the following observations regarding the original density and population:

> The original plan called for but 15 houses to the acre, but we soon found that the expense of carrying the underground utilities across acreage was so great that we turned to group housing, which is the dominant note in Mariemont, thus raising the number of house lots to about 1,000, the average size of each being 16 by 100 feet. Frontages range from 50 to 80 feet, with a depth of 120 feet (entirely too deep). About one-half of the 250 acres in Mariemont proper is in lots; *one-fourth in streets which vary from 40 to 80 feet;* and one-fourth in small parks or public property. The plan called for approximately 10,000 population; and the company's shopping and recreation district is large enough to serve 20,000.

*Subsequent Development.*—To date, Mariemont accommodates less than one-fifth of the ultimate population planned for. Several reasons which have contributed to this lack of growth should be pointed out. It was hoped at the outset to secure one or more supporting industries on the industrial site, notably the Cincinnati Milling Co. However, the town was built before industries had been secured, and the Milling Co. located on a site which they considered more favorable, just east of Norwood. As no industry of any consequence was subsequently attracted, the Mariemont Co., in order to protect its investment, was forced into attracting a higher-income group than that originally intended.

FIGURE 26.—Multi-family housing, Mariemont

Mariemont, from a commuter's point of view, is not entirely satisfactory, however. Bus and trolley fares are 15 cents as against 10 cents within the city limits. The Wooster Pike leads rather indirectly into Cincinnati, paralleling the railroad along the bluffs of the Little Miami and Ohio Rivers, and through a densely populated and decadent business and residential portion of the city, forming a heavy truck and transit route which, incidentally, passes through the town center of Mariemont instead of bypassing it. In the early stages of development, it is understood that an approach over Murray Avenue, which forms the northern boundary street, could have been negotiated. This route would not only have helped to remove through traffic from the interior of the community, but would have formed a much more desirable commuting route which would have connected directly with the Cincinnati parkway system leading to the central business district. It is improbable that this connection will now develop, although improvements contemplated by the city at present on the Wooster Pike will, to some extent, improve the present unsatisfactory condition. Thus, the town is in an unfortunate position at present both as a local industrial satellite and as a higher-class residential suburban community.

Although the site is at a considerably higher elevation than the Little Miami River at its foot and the valley to the south, its elevation in relation to the land surrounding it on the other three sides is low. It thus lies in a pocket open to the south but screened from the prevailing winds, which gives it no climatic advantage with respect to the well-known heat of Cincinnati's bluff-protected districts. With railroad yards to the south, an additional disadvantage is introduced. Its present status with respect to subsequent physical development may be judged by the following data received from Mr. Myron D. Downs, engineer and secretary of the Regional Planning Commission of Hamilton County:

> 444 vacant residence lots.
> 196 single-family dwellings (196 families).
> 17 duplex dwellings with (34 families).
> 38 groups of row houses with (170 families).
> 5 apartments with (64 families).
> 2,365 feet of business frontage (in use) comprising (10 lots).
> 3,655 feet of business frontage (vacant) comprising (business frontage for corner lots includes frontage on both streets) (7 lots).
> 9.09 acres industrial property—Mariemont (in use).

7.22 acres industrial property—Westover section adjacent to Mariemont (in use).

33.93 acres vacant in Westover (usable industrial property) (about 75% to 80% usable, rest difficult to use on account of rugged topography).

Dale Park section is the only completely developed portion of Mariemont at present. The inn group is the only portion of the town center which has been built up to date. A temporary structure opposite the inn at present houses a printing establishment. The inferior development which has taken place adjacent to the periphery strengthens the observation made elsewhere in this study regarding the great value of physical peripheral protection.

*Housing.*—Twenty-six firms of architects collaborated on the design of different housing groups in Mariemont, which are largely confined to semidetached and group dwellings in the Dale Park section. The results for the most part are exceptionally good. Masonry construction has been used throughout this section in order to avoid high maintenance costs and to utilize local stone and brick. "Flats" range from one to four rooms, with 270 to 400 square feet of usable floor space, and rent from $27 to $40 per month, with central steam heat included. Group houses contain four to seven rooms, with 460 to 1,000 square feet of floor space, rents varying from 25 to 45 and 65 to 90 dollars per month. Detached single-family houses rent from $90 to $125. The most successful types for rental have been found to be the four-room houses, renting from $25 to $35, and the five- to seven-room houses, renting from $35 to $60. Family densities per net acre are 7 for detached houses, 10 for apartment buildings, and 21 for group houses. A central steam plant adjacent to the Pennsylvania Railroad serves about three-quarters of Mariemont proper at present, with heating facilities to serve the entire community. It will be noted that the percentage of dwelling units owned by the company corresponds closely to the percentage of group and multifamily dwellings. There is much to be said for single ownership of this type of housing. At one time, the copartnership idea as practiced in England was considered but was found to be unpopular with the group planned for. However, the company has afforded residents the opportunity of purchasing its stock in the hope that similar results might be obtained. Terms of sale provide for a 10-percent cash payment at the time of signing the contract, the balance to be paid in equal monthly, quarterly, or semiannual installments at 6 percent per annum, payable semiannually.

Private restrictions cover type, use, and cost of dwellings, setback lines, side-yard widths, hedges, garage locations, erection of business structures, walls and fences, racial restrictions, livestock, signs, overhead wires, approval of plans and architecture, easements, and repurchase. These restrictions appear in both the land contract and deed. Restrictions continue in force until January 1, 1975, and may thereafter "be extended in whole or in part for successive periods of 25 years each, or after said date, may be altered with respect to the lots in any block, by an agreement in writing signed by the owners of 75 percent of the front feet in said block, the front footage to be determined by the actual frontage of the lots, whether upon a street or a park or place, but the company shall always have the right to change from time to time the plotting with respect to any property which has not been granted or sold."

The houses that have been erected privately are almost entirely of high cost, often occupying more than one lot and ranging up to $30,000 in cost. Population turnover in the community is about 6 percent per year at present. All houses are served by gas, separate storm and sanitary sewerage systems are maintained, and all telephone and electric wiring is carried in underground conduits.

## MARIEMONT, OHIO.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | |
| HOUSES | 111.52 | 43.97 | NO. OF HOUSE LOTS - 759 |
| STORES & APART. | 10.04 | 3.97 | HOUSES PER NET ACRE - 6.8 |
| TOTALS | 121.56 | 47.94 | |
| SEMI-PUBLIC AREAS | | | AVERAGE LOT AREA .15 ACRES |
| GARAGE | .89 | .35 | NORMAL LOT SIZE |
| FILLING STATION | .07 | .03 | DETACHED |
| HOTEL | .87 | .34 | 50 FT X 120 FT. |
| BANK | .37 | .15 | 80 " X 120 " |
| CHURCHES & CEM. | 2.31 | .91 | SEMI-DETACHED |
| TOTALS | 4.51 | 1.78 | 30 FT X 100 FT. |
| PUBLIC AREAS | | | GROUP |
| POST OFFICE | .83 | .33 | 20 FT X 100 FT. |
| TOWN HALL | .88 | .74 | NORTHWEST SECTION |
| FIRE STATION | .32 | .13 | DENSITY PER NET ACRE - 11.09 |
| PUBLIC MARKET | 1.19 | .47 | |
| LIBRARY | .97 | .36 | |
| COMMUNITY BLDG. | 2.57 | 1.01 | |
| SCHOOLS & STADIUM | 9.59 | 3.76 | |
| PARKS & PLAYGRS. | 51.76 | 20.45 | |
| TOTALS | 69.11 | 27.25 | |
| STREETS | | | LENGTH OF STREETS |
| FORTY FOOT | 10.00 | 3.95 | 40' WIDE 2.2 MILES |
| FIFTY FOOT | 22.34 | 9.02 | 50' " 3.7 " |
| SIXTY FOOT | 12.39 | 4.87 | 60' " 1.7 " |
| EIGHTY " (CARLINE) | 8.01 | 3.15 | 80' " .7 " |
| 150 FOOT SPECIAL | 5.16 | 2.04 | 150' " .3 " |
| TOTALS | 58.40 | 23.03 | TOTAL 8.6 " |
| GRAND TOTALS | 253.58 | 100.00 | |

DATA FROM OFFICE OF JOHN NOLEN

Table 12.

*Appearance.*—The advantages of collaborative planning in establishing a highly satisfactory esthetic composition are at once apparent in Mariemont. Especially pleasing and distinctive are the house groups designed by E. B. Gilchrist on Murray Avenue, and those by R. H. Dana, Jr., on Chestnut Street. The Memorial Church, presented by Mrs. Emery and designed by Louis E. Jallade, adds a touch of old world atmosphere to the community. The landscape treatment is excellent, and street and park plantings are exceptionally well maintained. Dale and Dogwood Parks are especially charming, the former affording an excellent setting for the church and school, the latter preserving a beautiful natural ravine extending diagonally across the site. Worthy of special mention are the appearance of the alleys and the upkeep of the vacant areas. Alleys are exceptionally wide, are curbed, and paved with red brick. Rear yards are fenced, and garages set back, giving the alley an appearance of a minor street rather than a service lane. Vacant lots are kept mowed and signs have been erected in each block, stating the future use of the area. The use of underground wiring and the ornamental light standards further add to the pleasing effect. The entire scheme, being of a more or less formal design, suffers at present because of its incomplete state. However, the Dale Park section is essentially complete and presents a splendid example of attractive site planning.

*Community Facilities.*—Every effort has been made to supply a wide variety of community facilities, including the Thomas J. Emery Memorial Recreation Building, with stadium and tract, which is used by 1,500 persons; a grade school erected by the company and operated by the county; allotment gardens, which are said to be highly appreciated; the Memorial Church; and the park areas already mentioned, which include a nine-hole golf course, a boathouse on the lagoon, and a carillon tower erected as a memorial to Mrs. Emery. It is stated that a swimming pool is one facility still needed and now in prospect.

*Government.*—The functions of municipal government are carried on by the company, which exercises all authority, including the maintenance of streets and parks, fire protection, and upkeep of lawns and shrubbery, except, however, for policing and the public school, which are under county supervision. Several reasons exist for the absence of a municipal status. The community is still in the middle stages of development, the company's interest including about 80 percent of the house ownership and 100 percent of the utilities, public open spaces, and vacant land ownership. Another element of importance, according to Mr. Downs, has been the refusal of the Cincinnati City Council to annex the development because of the relation of bonded indebtedness to assessed valuation which exists.

In 1926, it was planned, at such time as the community became well established, for the company to withdraw and turn the function of government over to the home owners, who would incorporate under a charter based on recommendations contained in the Rockefeller Foundation research studies. At the same time, public buildings and parks would be presented to the newly formed town.

*General Considerations.*—One of the difficulties encountered at Mariemont has been the amounts of money which have been expended in carrying out the demonstration or "National Examplar" idea. This is reflected in the high unit costs, to some degree unjustified, as in the case of excessively heavy duty streets, the use of heavy bronze lighting standards, which incidentally have since been painted, and other comparable provisions. It should be noted, however, that underground wiring is not necessarily one of these elements. Industry has recognized its practical value, as indicated in such relatively old communities as Morgan Park and Atco, and the newer Chicopee.

The following interesting comments on costs and utilities were furnished by Mr. Livingood:

* * * The initial cost of the land, for Mariemont proper, i. e., 250A., because of the farmers' homes, etc., was $1,720 per acre, namely $430,000. This makes the cost per square foot only 4 cents * * *. This means that the 125A. available for lots in the Mariemont project cost only $215,000 * * *. The year 1923, following the laying out of the lines, was consumed in installing underground utilities, gas, electricity, telephone, sewer and drains, outfall sewer and water, at a cost of nearly 1 million dollars.

There was also erected on the Pennsylvania Railroad (which connects with the Norfolk & Western near the site), a steam plant with an underground distribution system to three-fourths of Mariemont proper, at a cost of $780,000. There are 3½ miles of mains, and over 1 mile of services up to lot lines * * *.

Next came the planting of the Mount Vernon Nursery where, by May 1, 1923, there were 80,000 trees and shrubbery growing, and most of these have been planted out on the streets and around homes.

Water is obtained from the city by one 8-inch and one 12-inch main which delivers to service pipes at two different locations to avoid interruption of service. Fire plugs are distributed throughout the property 300 to 350 feet apart, the company paying 1½ times the Cincinnati water rates.

Gas and electricity, all wires underground, are had at city rates. The electric current is brought from the new Union Gas & Electric Co. light plant some 15 miles away, where the Big Miami enters the Ohio River. The Mariemont Co. erected its own transformer plant which is automatic. The Cincinnati Union Gas & Electric Co. charged for bringing the gas main through Mariemont, but rebates when it uses these mains for outsiders in the locality. Net cost to us (Mariemont Co.) $28,000, total, $129,000 to Gas Co. The Mariemont Co. paid for the water installation.

The Cincinnati & Suburban Bell Telephone Co. put its long-distance wires underground at its own expense, and the Mariemont Co. paid for bringing telephone wires in clay con-

ducts to the lot lines of every lot in Mariemont proper, to accommodate 1,200 telephones.

**Radburn, Bergen County, N. J.**

Established in 1929 by the City Housing Corporation. Within the corporate limits of Fairlawn Borough. Population, 1936, approximately 1,450. Site and housing planned by Henry Wright and Clarence Stein, planners and architects. Consultants, F. L. Ackerman, Robert D. Kohn, Thomas Adams, Sir Raymond Unwin, and others.

*Location.*—The site of Radburn lies between the cities of Paterson, Hackensack, and Ridgewood, N. J., on the right-of-way of the Erie Railroad, and 10 miles from the George Washington Bridge. The proximity to Manhattan Island, the presence of railroad facilities, low raw land costs, and favorable topography were the primary factors in the selection of the site, upon which it was intended to build a self-contained community of about 25,000 persons of moderate incomes. Fairlawn was an old rural community which included large areas of agricultural land. The site selected for Radburn provided a gently rolling area of comparatively high elevation which lent itself to good drainage, good

FIGURE 27.—As planned

building sites, and access to highway and rail connections.

*The Plan.*—About 2 square miles of land lying north of the center of Fairlawn was purchased, and an industrial district of 127 acres was set aside. Essentially, the objective of the founders was to provide a community, based upon garden-city principles, which would provide (1) a maximum of convenience for the movement of motor traffic; (2) a minimum of conflict between motor and pedestrian movement; and (3) all possible improvement over current custom in the consideration of the health and happiness of residents. The adaptation of the cul-de-sac, the use of the superblock, a system of interior park areas, the designation of independent park and motor entrances to each house, and the separation of pedestrian and motor traffic, are the outstanding features of the plan. Superblock sizes vary between 35 and 40 acres in area, each surrounded by wide traffic streets, giving access to a series of narrow cul-de-sac streets averaging about 275 feet in length, around each of which are from 10 to 18 dwelling units. Linear park areas of from 3 to 7 acres were formed in the interiors of the superblocks. These areas, connected with each other by grade separations at the traffic street rights-of-way, form not only the park system of the town but the facilities for pedestrian circulation as well. However, the scheme was intended as an attempt not only to reduce the friction between wheeled and foot traffic, but also to reduce excess costs in street and underground utilities. The resultant saving expected is set forth by Henry Wright in a statement in *The American City* of December, 1928:

* * * in order to appreciate the economies of the plan, it is necessary to examine an individual lane. This lane contains 16 house lots averaging 43 feet wide, or 680 feet of frontage. The lots are served by ½ of 230 linear feet of utilities on the main street and 300 lineal feet from the center of this street to the end of the lane, a total of 415 lineal feet of utilities or 26 feet per lot. However, let us suppose the street end of the lane containing the first 10 lots to be doubled on axis A, forming a normal block 400 feet long containing 20 lots, averaging 45 feet. This would require twice ½ of 230 lineal feet of utilities on the two end streets, and 480 feet of utilities from center to center of the main streets, a total of 710 lineal feet for 20 lots or 35.5 lineal feet of utilities per lot, an increase of 36 percent in utilities required in the Radburn plan. In other words, in a normal street plan a lot 43 feet wide will require 21½ feet of utilities (43 feet shared with opposite lot) on its front line and 13½ feet (60 percent extra utilities on side frontage) making a total of 35 feet. At Radburn a 43-foot lot requires a total of 26 feet of utilities, an excess of only 4½ feet, or less than 20 percent for side-street waste and intersections. Admitting the obvious problems brought up by this or any other new method of planning, it would seem worth an experiment to save from 25 to 30 percent of the utilities now required in residential neighborhoods.

FIGURE 28.—Interior Park Area, Radburn

A criticism of the Radburn plan which has been voiced by Mr. Barry Parker, of Letchworth, England, relates to the frequency of access points on the main traffic street caused by the culs-de-sac. The suggestion that a subsidiary street be introduced parallel to the traffic street brings out the following points as stated by Mr. Wright:

* * * The boundary streets are not so located as to constitute main traffic arteries. At Radburn it is planned for practically every house to have its individual garage integral with the house, so that in substituting, in place of lane entrances, a long row of houses fronting on the main street, the result would be an increased number of individual drives, intersecting the curb line of the traffic street from which cars must be backed into the street from the garage. The present tendency at Radburn in developing future plans is rather to eliminate as far as possible all private driveways along main streets. In the third place, the principle of safety for children going to school or to play would be greatly reduced by the interposition of even a secondary street where motor vehicles would speed up over a stretch of six to eight blocks of length. Finally, the gain in economy of the cul-de-sac can only be realized where its length can be great enough to balance the loss of side yard frontage necessary at the mouth of the lane.

The above discussion conveys, in general, the principles followed in arriving at the plan of Radburn.

*Subsequent Development.*—Radburn had but two superblocks partially completed when the period of depression suspended further development. It is, therefore, difficult to arrive at any definite conclusions regarding the ultimate success of the Radburn plan. A statement dated June 4, 1935, set forth in United States District Court proceedings for the reorganization of the City Housing Corporation presents the status of the town approximatey as it exists at the present time:

City Housing Corporation is a New York Corporation, organized in 1924. The company was organized as a limited dividend corporation for the purpose of contributing to better housing and community planning and living. The first enterprise undertaken by the company was the development in Long Island City N. Y., known as Sunnyside. Approximately 70 acres of land were purchased and on this site the development was erected. The development at Sunnyside now consists of

one-, two-, and three-family houses and apartments, accommodating 1,500 families. The Sunnyside development is substantially completed.

In 1927, approximately 1,350 acres of land were purchased by the company at Fair Lawn, N. J., for the development now known as Radburn. During 1928 and 1929 there was built at Radburn a series of one- and two-family houses accommodating over 300 families; an apartment house for approximately 90 families; a store and office building; various other buildings, garages, gasoline stations, sewerage disposal plant, etc. It was expected that approximately 400 houses would be built each year and that a carefully planned model city would be completed within a few years. The depression necessitated a radical curtailment of the building program so that in the past 4 years, practically no additional building has taken place at Radburn.

As a result of the extended depression in real-estate values over the past few years the properties of the company now fail and have failed for several years past to carry the fixed charges on the obligations of the company.

In order to make possible the continued operation of the two developments and to conserve as far as possible the investments represented thereby on the part of all persons interested, it was deemed necessary by the company to reorganize under section 77B of the Bankruptcy Act; a petition was accordingly filed by the company in the United States District Court for the Southern District of New York on the 1st day of August 1934, which petition was approved by the court on that date. The company felt that a successful reorganization required (1) that the fixed obligations of the company, so far as possible, should be placed upon an income basis, and (2) that a larger degree of separation should be made between the Sunnyside and Radburn developments.

Efforts by the company to obtain new capital to assist in the situation proved unavailing; and the plan as proposed makes no provision for the investment of new funds.

The town thus far has failed of its realization, largely because of conditions over which it had no control. However, certain factors may be considered which may affect any future development for some time to come. The inhabitants of Radburn are confined largely to commuters. According to a survey conducted in 1934, 70 percent of the male wage earners worked in New York City, and 17 percent in New Jersey, while 10 percent of the women inhabitants worked outside the town limits. The total commuting population represented 46 percent of the entire adult population. Commuting facilities in various parts of the New York region are consuming of both time and money, and Radburn does not offer any special advantages at present. Hourly bus service is maintained between Radburn and the George Washington Bridge which requires a subway connection with downtown New York. The Erie Railroad offers commuter service but rather unfavorable terminal facilities in New York City. Motor connections via the George Washington Bridge, Riverside Drive, and the West Side trunk highway are, of course, good but offer the objection of New York traffic. The dependence of Radburn on the Erie Railroad as an inducement for industrial plant location there is an element which may well affect the future selection of the town for industry.

RADBURN, N.J.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | |
| HOUSE | 250.0 | 42.0 | FAMILIES PER NET ACRE – 10 |
| APARTMENT | 82.0 | 14.0 | |
| BUSINESS | 42.0 | 7.0 | |
| TOTAL | 374.0 | 63.0 | |
| PUBLIC AREAS | | | |
| PARKS & PLAY AREAS | 73.0 | 12.0 | |
| SCHOOL SITES | 31.0 | 5.0 | |
| TOTAL | 104.0 | 17.0 | |
| STREETS | | | |
| CULS-DE-SAC | 27.0 | 4.5 | |
| OTHERS & ½ OF BOUNDING STS. | 95.0 | 15.5 | |
| TOTAL | 122.0 | 20.0 | |
| GRAND TOTAL | 600.0 | 100.0 | |

AREAS OBTAINED BY SCALING TOWN PLAN OF RADBURN.
SCALE OF PLAN: 1" = 147.5'

Table 13.

Not enough of the development has been built to subject the system of grade separations to a test. At the present time, only Fairlawn Avenue carries through traffic and is provided with a pedestrian overpass. Howard Avenue, at which the pedestrian underpass occurs, has not been carried beyond Radburn Road, and no traffic pressure has been created to indicate the true value of the underpass. It is interesting to note that the physical arrangement designed to force pedestrian traffic through this underpass has not succeeded to the extent of working automatically. The tendency of persons to follow the line of least resistance can hardly be overcome by providing a separation at one point which requires an indirect approach from several points, without providing undesirable physical barriers or augmenting the physical provisions by some form of regulation.

*Housing.*—The most radical departure from the standard type of house plan has been the result of the introduction of the park entrance and the motor entrance. This has very properly eliminated the familiar back door in favor of two fronts. The house facades have been treated accordingly, with distinctly beneficial results. While a number of houses are of brick, the majority are of frame construction. The consideration of the fire hazard strengthens the criticism that the lots provided for detached housing are too narrow to provide adequate side yards. A recognition of this fact is indicated by the elimination, in some instances, of all window openings on the side yards. A more satisfactory result would have been

obtained either by adopting the semidetached or group house throughout or by providing more frontage for the detached dwellings. If the side yards are too narrow for the adequate provision of light, air, and privacy, their function as a passageway hardly justifies their existence, especially as service and garage facilities are all on one side of the dwelling. The attached garages in themselves are desirable but have been an additional factor in decreasing the side-yard width. The relatively small private lots are on the whole justified, however, as the majority of the population are acclimated to New York apartments, and the adequate park areas and other recreational features make large private lots unnecessary. The use of the lot has taken one of several directions. Either the owner has come from other parts of the country and desires more land for gardening than he now has or can afford in the New York region, or he has moved to Radburn because of his desire for open space but as yet has not fully realized the care which even a small lot requires, or the family has been attracted almost wholly by the social and community facilities which are afforded, and is not interested in any aspect of gardening. Consequently, the maintenance of individually owned homes varies considerably with the interests and inclinations of the occupant.

*Appearance.*—The most striking feature of Radburn is the interior system of parks and the grouping of the houses. In spite of the elimination of the "rear" entrance, the cul-de-sac still has the appearance of a rear approach and the suggestion of an alley. This is largely due to the presence of pole lines, the inevitable use of the abutting yard for service purposes, and the concrete center-drainage pavement. All of these items are looked at askance because they are commonly associated with alleys rather than because they are organic defects. This brings up the question of the practical limitations in the abolition of the "rear" yard, and the importance to be attached to the street picture. If, however, the streets are considered as purely functional and utilitarian boundaries for the interior parks and the social unity which the latter suggest, another consideration arises in that less than 20 percent of the houses actually face on park areas. The remaining houses front on the pedestrian walks which run between the cul-de-sacs. There are certain advantageous features to each of these locations as the former has the advantage of an open expanse of lawn, while the latter is afforded a greater degree of quiet and privacy. However, it would seem that the attempt at privacy had been overdone in the planting which, on the park frontage, completely screens the park from the property in many cases, while the walks between cul-de-sacs are bordered with high shrub plantings which defeat the feeling of spaciousness suggested by the plan. This impression of overplanting is hardly to be expected, considering the relatively short period in which the community has existed.

It is believed that more advantage could have been taken of various vistas into the interior parkways. A rather unfortunate relationship exists between the Abbott Court Apartments and the house groups behind them, which fails to take full advantage of the possibility afforded. From the park areas, however, the absence of any strong architectural lines creates a charming informal effect which has been well handled throughout. Perhaps the most interesting and successful housing group from the park side is that surrounding the small park area between Ballard and Barry Place, which will form the park connection with the future adjacent block. This arrangement illustrates the possibility of utilizing the interior park between cul-de-sacs as well as at the end. It has the economic disadvantage, however, of creating more street frontage than the method elsewhere adopted. Certain objections arise also in the use of the park areas for active recreation. Dissatisfaction has been expressed by prospective buyers considering homes located adjacent to the area devoted to the swimming pool and baseball field.

*Community Facilities.*—The social success that has been realized at Radburn rests largely upon the following considerations: (1) The physical plan has provided facilities in a pattern which has turned the focus inward onto the parks, school, swimming pool, etc., and relegated to the periphery the conflicting influences of traffic and business. By this arrangement, the mechanics of encouraging a unified social life have been facilitated. (2) A social program was provided with great thoroughness. (3) The age composition of the population is below the general average, being around 35 years. A large percentage are college graduates, and the earning capacity of the families is on a comparable level. These elements offer another factor for congenial social activity. In addition, between 25 and 30 percent of the population are children, a large percentage of whom are under school age. (4) The lack of community life in metropolitan New York has drawn together a group of more or less socially unattached persons, each seeking a common element. This fact, incidentally, has largely removed the objections to the cul-de-sac here, as it has substituted the community gathering and the neighbor-visitor for the out-of-town friends with cars, which make the cul-de-sac a difficult problem. In a survey made in 1934, it was found that only 3.27 percent of the 336 families then living in Radburn did not take part in some phase of the community life. This indicates to some extent the ease with which such cooperation may be realized in a new community where everyone is transplanted at once and people are mutually seeking new social contacts. These community activities are

carried on under the sponsorship of the Radburn Citizens Association and include the Radburn Singers, Radburn Players, adult education discussion groups, garden club, and all forms of outdoor recreational activities. The present size of the community has, it is true, caused difficulty in organizing a church. At present, services are held in the Plaza Building in winter and in one of the park areas in summer.

The above observations add strength to the argument for a community in which the people are similar in characteristics, income, and age. It has been observed at Radburn that in those instances where incomes varied widely, difficulties were encountered in regard to the provision and maintenance of recreational facilities by an association dependent for its support on fees or assessments. The discord comes, of course, in the inability of the poorer members to pay the current fee while at the same time requiring, at least, the same facilities.

In general, the social and recreational features of Radburn are highly successful, but this is due to certain circumstances which are perhaps peculiar to a large metropolitan area such as New York. In respect to its community solidarity and activities, it is much like Forest Hills Gardens. Here, however, emphasis must be placed on its relative isolation. Commuting time of an hour, either by bus or rail, a distance of 14 miles from New York, and no near-by attraction in the form of movies, etc., are additional elements which encourage full use of the facilities offered.

*Government.*—The nucleus of a town within a town has created certain problems of government and administration. The borough of Fairlawn was incorporated in 1924 and had a population of 5,990 in 1930. It is essentially a rural town, and the establishment of a development of an entirely different character within its limits naturally creates differences of opinion and the necessity for adjustments. The school system seems to be one of the points of conflict. As Radburn furnishes a minority in the voting population, the disposition of these differences at present depends largely on the amount of voluntary cooperation which can be obtained between the two groups.

In matters relating to Radburn alone, the Radburn association forms the immediate community authority. It is composed of nine trustees, serving without compensation, who operate in effect as a municipal administration through a town manager. Their functions cover street and park maintenance, fire and police protection, scavenger service, sewer maintenance, cooperation with the municipality of Fairlawn, the enforcement of deed restrictions, authority to fix and collect assessments, acquisition of property, and the retension of agents, attorneys, and others necessary to carry into effect the purposes of the association.

The comprehensive deed restrictions which cover all property within the community are in force until January 1, 1960, with provision for automatic renewal over succeeding 20-year periods, subject to modification or termination by 51 percent of the then property owners at periods specified not less than 5 years prior to the date of automatic renewal.

*General Considerations.*—Any conclusions regarding Radburn must be stated with consideration for the small portion of the development which has yet been carried out, and the effect which economic conditions have had upon the community. With respect to Radburn and Forest Hills Gardens, the former is a younger community, contains a younger age group and a lower income group. It therefore felt the economic conditions more acutely. It is significant, however, that in both communities the evidence of community solidarity was strong. In both instances, residents mowed their neighbors' lawns, delivered eggs, fired furnaces, and the like without any loss of social esteem, which replaced any suggestion of charity with the higher attitude of mutual cooperation. This indicates one of the very practical results that can be obtained through the solidly knit community spirit.

The difficulties encountered by the Housing Corporation were affected considerably by the carrying charges on land. As less than 20 percent of Radburn has been developed and sold, these carrying charges, as indicated by the average initial cost of $2,000 per acre, have been the crucial point upon which the financial success or failure of the development has depended.

The chief element of interest at Radburn has been the frank attempt to organize, in a comprehensive manner, a number of physical and social elements which in themselves were not new or unique, but which when combined into an articulated pattern promised an example of a better form of community life.

## Suburban Communities

### Chatham Village, Pittsburgh, Pa.

A limited dividend housing development of the Buhl Foundation. Located within the corporate limits of Pittsburgh. The first unit of 129 homes was completed in 1932, a second unit of 68 homes completed in 1936. Approximate population in 1936, 700. Town planners, Clarence S. Stein and Henry Wright. Architects, Charles T. Ingham and William Boyd.

*Location.*—Chatham Village is located 2 miles by motor highway from the heart of the Triangle in Pittsburgh. It is at an elevation of 400 feet above the city's business district. The site was chosen by the Buhl Foundation for the reasons that it was easily accessible to the downtown business area, was particularly free from smoke, and had an autonomy by virtue of its topography. Thorough studies were made of the area from the standpoint of transportation, population,

wealth, and house building, and cultural facilities such as parks, homes, schools, and churches. The adjacent community was studied to obtain a social and economic cross-section of the environment. Except for a manor house, no previous building development had ever taken place on the tract. Studies of the topography showed that only 25 of the 45 acres could be developed in house sites without excessive grading.

*The Plan.*—The built-up area of Chatham Village is composed of three blocks, approximately 675 by 190 feet; 840 by 260 feet; and 700 by 300 feet. Bounding streets are 45 and 50 feet wide, with roadways 16 to 24 feet wide with occasional 15-foot diagonal parking strips. Garage facilities have been provided for approximately 108 cars in three compounds, one in each block. Of the 197 dwelling units, 89 have individual garages.

Interiors of the blocks are in communal open lawn areas with occasional sand boxes and pavilions enclosed in shrubbery plantings. Each house unit is connected by walks with the larger central lawn areas. There are no continuous street sidewalks. The changes of grade throughout the property give an added interest by the use of steps in the interior system of walks. A small shopping center of four units is located at the corner of the development nearest downtown Pittsburgh.

The area not built up, consisting of 27 acres, has been reserved for recreational uses. Twenty-three acres of this area are in woodland, in which 2 miles of trails have been constructed. About four additional acres are devoted to playgrounds and an athletic field. The density of the built-up area, consisting of the three blocks, is about 12 families per acre. Including the adjacent open area of 27 acres, however, the density for the entire Chatham Village property is less than five families per acre.

The old manor house has been retained and remodeled as the Chatham Village Club. Social gatherings, open forums, child study, dramatics, and various hobby groups are centered here under the management of the members.

Adjacent to the site proper of Chatham Village is Olympia Park of Pittsburgh, which has a swimming pool and tennis courts and where twilight baseball games and city band concerts are offered in the evenings and on holidays.

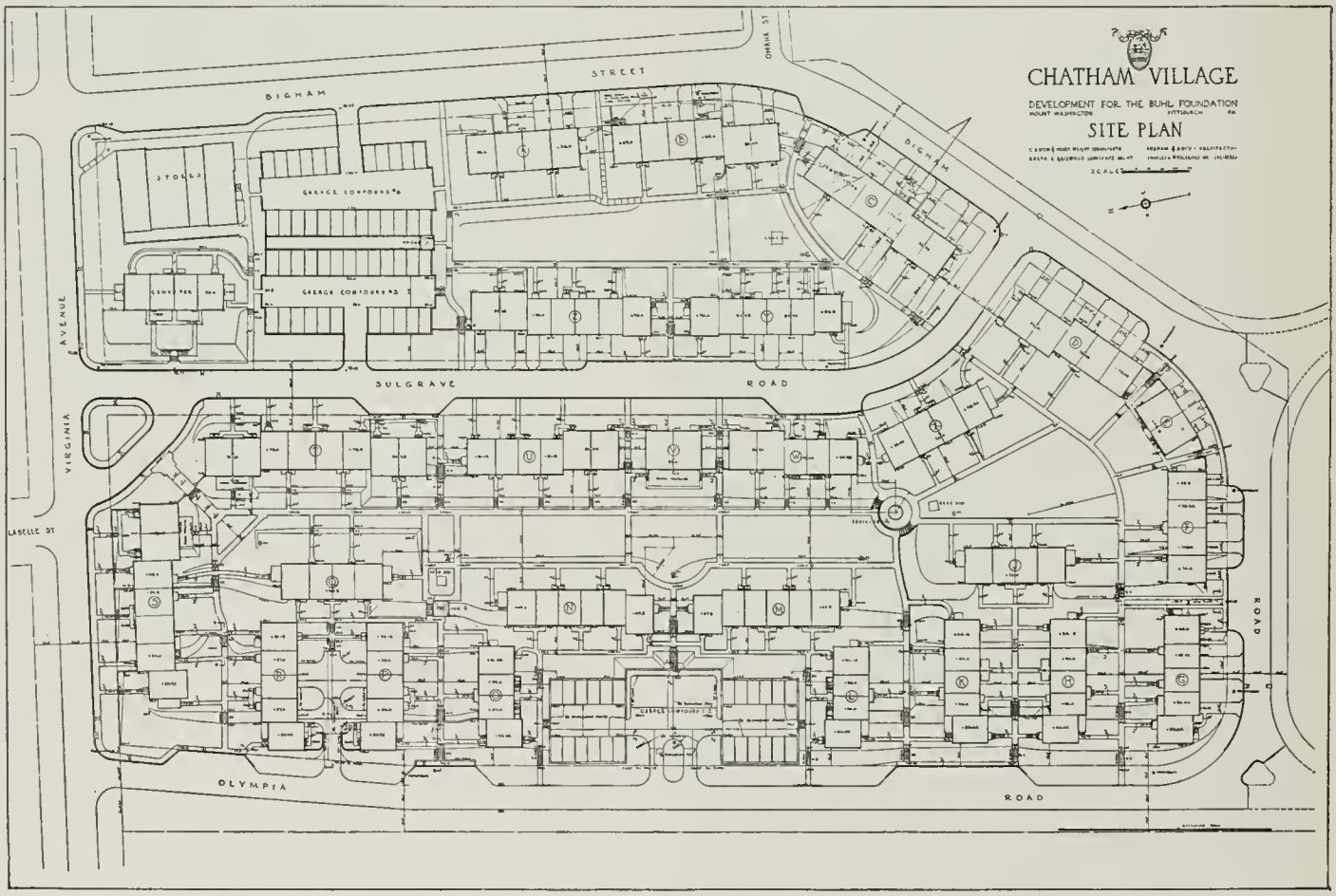



FIGURE 29.—As planned and developed

CHATHAM VILLAGE, PITTSBURG, PA.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | HOUSING |
| RESIDENTIAL | 15.8 | 63.0 | GROSS DENSITY – |
| BUSINESS | .2 | .8 | 5 FAMILIES PER ACRE |
| TOTAL | 16.0 | 63.8 | DWELLING UNITS – 197 |
| PUBLIC AREAS | | | |
| ATHLETIC FIELD | 2.5 | 10.0 | |
| COMMUNITY AREAS | 1.5 | 6.0 | |
| TOTAL | 4.0 | 16.0 | |
| STREETS | | | |
| 40-50-60 FT STS. | 5.1 | 20.2 | |
| TOTAL | 5.1 | 20.2 | |
| GRAND TOTAL | 25.1 | 100.0 | |

STREETS AS SCALED FROM SITE PLANS INCLUDE ONE HALF OF STREETS BOUNDING THE BUILDING DEVELOPMENT AND ALL OF THE STREETS WITHIN THE PROPERTY.
COMMUNITY AREAS (INNER BLOCK) AS SCALED FROM SITE PLANS.
WOODLAWN PARK OF 23.0 ACRES IS ADJACENT TO AREA IN BUILDINGS AND IS NOT INCLUDED IN ABOVE.
SCALE OF PLAN: 1" = 66'

Table 14.

*Housing.*—The Buhl Foundation before starting Chatham Village concluded after much study that to meet the needs of Pittsburgh's moderate-income group, they could not bring monthly payments down low enough to sell houses. It was therefore decided to rent them. The housing chosen for rental purposes was a row type, only 2 percent being semidetached. This was done after due consideration of the fact that Pittsburgh is traditionally a city of detached houses. More amenities at lower cost and far greater degree of social and economic security were found to be possible under a rental than under a home-ownership program.

There are four basic types of houses. The differences of elevation in grade, however, offer a wide variety of treatment. Houses have from five to eight rooms. Some have full-sized dining rooms, some dinettes. Some ground floors provide an inbuilt garage, others have attractive sunrooms with fireplaces. Regardless of size or rental, all houses have completely equipped kitchens with electric refrigeration, oven-heat regulation, forced draft ventilators. All have complete steam-heating installations, with low-cost, automatically controlled natural gas-burning furnaces and hot-water heaters. Houses are weather stripped and have rock-wool insulation in second-story ceilings. All houses have laundries.

Rents are from $47.50 to $87. The cost of site development of each of the first 129 houses was approximately $1,221.60, and each of the houses cost on the average $5,278.40, totaling about $6,500 per dwelling. Vacancies for the first year were 2.32 percent; for the second, 1.03 percent; and for the third year ending January 1, 1934, 0.17 percent. For the first year, rents averaged $11.35 per room; the next 2 years these were lowered to $9.70. The average annual rental for the 3-year period was 12 percent of the total investment. This was itemized as follows: 2.5 percent, taxes; 2.0 percent, house and garden maintenance; 1.25 percent, management, insurance, and contingencies; 1.25 percent, amortization; and 5.0 percent, net yield. The amortization fund is reinvested and compounded semiannually at 4½ percent, at which rate it would retire the building cost in approximately 31 years.

*General Considerations.*—The considerations that strongly influenced the molding of the Chatham Village project were given as follows in the *Buhl Foundation Report for the Year 1930 31*:

1. To demonstrate the social and economic advantages of the large-scale planned garden homes community.
2. To demonstrate the advantages of social and economic security that are to be had from rental rather than purchase in a community managed from a long-term investment viewpoint.
3. To demonstrate that it is possible to build and operate such a community so as to yield a moderate but satisfactory investment, nonspeculative, return. The project is in no sense philanthropic. It is designed to be commercially practicable.
4. To develop new ideas and higher standards in house design and large-scale community planning.
5. Particularly to develop an appreciation of the contributions which may be made by competent site planning to large-scale hillside developments.

Chatham Village today is an outstanding accomplishment in housing development. Its set-up is economically sound; it has a well-constructed physical plant, providing comfortable homes in well-designed buildings in appropriately landscaped surroundings—all planned as an integrated community.

FIGURE 30.—Typical housing, Chatham Village

## Forest Hills Gardens, Long Island, N. Y.

Established in 1911 and developed by the Sage Foundation Homes Co. Financed by the Russell Sage Foundation. Within the corporate limits of Greater New York. Population in 1936, approximately 5,000. Town planner, Frederick Law Olmsted. Architect, Grosvenor Atterbury.

Forest Hills Gardens, one of the earliest conceptions of community planning to be set up, is unique in community development in the United States: (1) as a business enterprise expected to yield a reasonable return on the investment; (2) as a demonstration and an educational project to show what could be accomplished in real-estate development by comprehensive planning. A statement from Clarence A. Perry of the foundation made in 1936 contains excerpts from a release by Mr. John M. Glenn, general director of the foundation, dated September 4, 1911, setting forth the general aims and objectives of the founders:

The trustees of the foundation wished to create a suburb that would combine beauty in the arrangement of grounds with attractiveness and permanency in building. This required the investment of over $2,000,000; that is, over one-fifth of the capital of the foundation. The maintenance of the work of the foundation requires that its capital be kept undiminished and that this scheme, like all other investments, must yield a good business profit. Any other basis of action would mean merely to give charitable aid to the individuals who might occupy the property, a policy which would be demoralizing, and contrary to the fundamental principles of the foundation * * *.

Failure to make the project a reasonable commercial success would also mean that the educational policy of the foundation would miscarry * * *. Its chief success, if it have any, will be the creation of an example of intelligent and charming use of real estate which will be tempting to other investors in the vicinity of New York and in more distant parts of the country.

Neither will Forest Hills Gardens be a suburb for laboring people with small wages. Possibly the company of the foundation may see its way to establishing such a suburb in the future. But it seemed best that it should test, and if possible prove, the feasibility of creating and marketing a suburb combining aesthetic charm, economy of arrangement and commercial marketability. * * *

* * * At Forest Hills, because of the cost of the land, small houses with any land attached, if well built, could be sold only at a loss. Our suburb will, however, meet the needs of many people of moderate means, who now have to choose between a city apartment or a frame house in a suburb built on conventional lines.

Finally, the general aim of the company is to provide for persons desiring to buy lots on which to build homes in an environment that will be beautiful and convenient, and for those who buy houses, artistic, compact, and substantial structures at reasonable prices. It desires to give full value for each

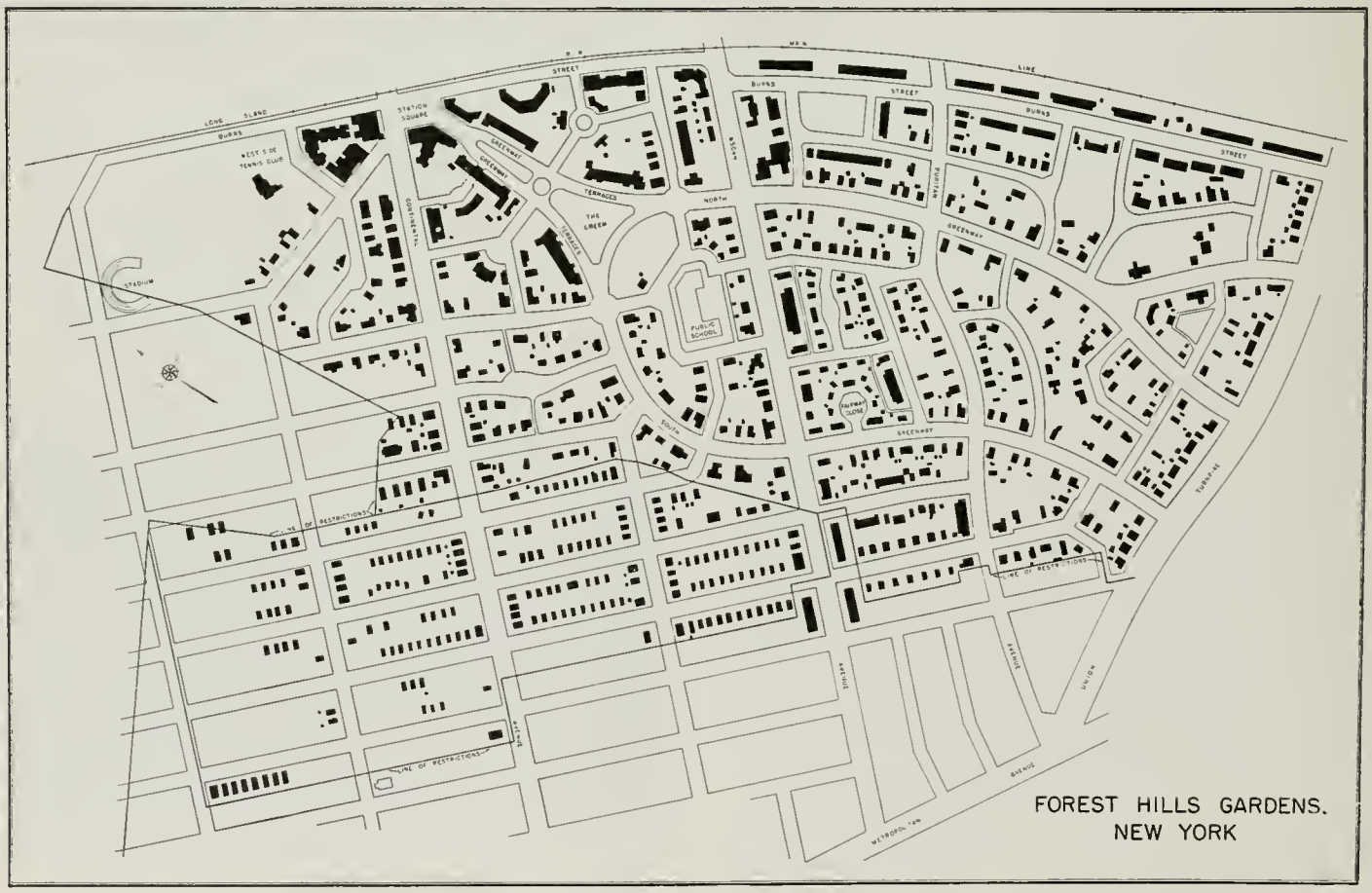



FIGURE 31.—Existing conditions

purchase and at the same time to dispose of its property at prices that will give it a moderate, but fair return for the money and time invested in it. It will neither give anything away nor be greedy to make the last cent out of its clients. It will not permit lot owners to build unsightly houses, nor to establish nuisances, neither will it attempt to control their actions beyond seeing that the general atmosphere of beauty and order is preserved.

*Location.*—The site comprised 142 acres of raw farm land, 8 miles from the Pennsylvania Station on the Long Island Railroad. Planned as a residential suburb, special emphasis was placed on accessibility and commuting time from Manhattan Island. Shortly after the purchase of the land, the railroad tunnel connecting Manhattan with Long Island was constructed, bringing the Gardens within 15 minutes of New York's business center, and further increasing the desirability of the site. In addition, Queens Boulevard serves as a direct motor connection to New York City.

*The Plan.*—Three major principles were set forth by Mr. Olmsted, which form the basis for the plan: ample, direct, and convenient thoroughfares; cozy, domestic character of local streets; sufficient parks and public open spaces. Two radiating "greenways," converging at station square, and four secondary thoroughfares form the street skeleton to which the local residential streets were related, all streets being functionally related to the expected traffic flow and volume and to the gently rolling topography of the site. Station square forms the shopping center and focal point of the development, acting as a collector and distributor for a large part of the traffic passing into and out of the community. A village green was provided in the area between the diverging greenways. Six interior parks designed for the use of abutting property owners were originally planned, and a school and playground site was reserved on the axis of the village green. The residential blocks were subdivided into parcels approximating 20 by 100 feet, as a means of making sales and subsequent development more elastic.

The boundaries of the original gardens provided for partial physical protection against subsequent contiguous development but also created problems which have since become evident. The right-of-way of the Long Island Railroad on the northeast provided a definite boundary, but offered objectionable features to adjacent residential development. To the south, the large public area of Forest Park formed an effective barrier. The boundaries on the north and west followed the irregular property line of the original farm.

In order to establish the character and stability of the gardens, the company adopted the policy of erecting homes in various parts of the development to serve as examples for adjacent home builders, and established one of the earliest sets of comprehensive deed restrictions to be found, which run with the land until January 1950, at which time they may be extended for successive 20-year periods without limitation by the assent of the owners of two-thirds of the area within the development.

*Subsequent Development.*—The conditions which surrounded Forest Hills in 1911 have changed greatly. Its location in the Greater New York region has brought outside pressures of an intensity which exists in few other metropolitan centers. Early in the history of the gardens, this pressure was brought to bear in the form of the subdivision of land in the adjacent area to the west and north. The area east of the railroad right-of-way began to develop in typical New York fashion. A certain degree of physical separation was obtained, however, by the elevation and depression of the railroad bed. The establishment of the West Side Tennis Club on a site of 10 acres to the north provided a partial barrier against a subsequent apartment-house district. The latest encroachment on the gardens has been the widening and extension of the Old Union Turnpike into part of the new Interborough Parkway, which has made it necessary to demolish several dwelling units and a number of house fronts, leaving the remainder without an adequate set-back from the roadway. Forest Park has thus been largely

FIGURE 32.—A "close," Forest Hills Gardens

removed as a factor of either recreational or protective value. The private park areas as actually developed proved to be too small for adequate recreational facilities and created a problem of administration and maintenance. The major merits and defects of the physical plan have been adequately set forth in the following statement from Mr. Perry:

Among its merits are to be mentioned the functional street system, highway widths in proportion to their respective loads, the inclusion of parks, a school site, and definite boundaries on at least two sides of the development. The size of the development has been just about right to accommodate a population which requires one elementary school. Because of its right size and functional character it has contributed to a conscious local community life which is one of the factors in the success of the development. Among the defects of the physical plan may be mentioned the following (most of which are due to the automobile vogue that was not foreseeable in 1910 when the development was being planned):

1. Not enough play space was provided. Because of this fact boys have frequently injured the shrubbery. They have overcrowded the existing small parks and control of their conduct has been a continuous problem for the community throughout its existence.

2. The street plan contains four through streets (Ascan, Continental, and the two greenways) in which automobile traffic has been the source of accidents and a continuous menace. A fifth street (Burns), which is a boundary street, has functioned badly in that a part of the way there are houses on both sides. By reason of its position it draws through traffic, but it is not wide enough to make rapid driving safe. It would have been improved if there were houses only on one side of the street throughout its entire length within the development.

3. On the southwest side of the development, the boundary, which follows the lines of an old farm, is irregular. The improvement of the Vanderveer tract on this side created a difficult problem. The promoters of the new tract, while planning to exploit the fine residential values created by the gardens, were not going to build the kind of homes which would help to support residential character already created. The problem was somewhat ameliorated by the owners of the tract in allowing the architectural committee of the gardens to exercise an architectural control over the homes in the Vanderveer tract adjacent to the gardens for three or four blocks. The extent of that control is shown on the accompanying progress map of the Forest Hills Gardens and the Vanderveer tract. In order to mark the boundaries of the gardens, the Gardens Corporation erected several brick markers on streets at the point where the gardens restrictions terminated.

4. In setting density standards, the promoters made possible the erection of too large a percentage of apartments to fit into the social scheme of the community. The flexibility in this regard, permitted by the restrictions, was justified by the uncertainty which surrounded the future of the development. Since the promoters of the Gardens had set up the project as a commercial one, requiring for its success the making of a profit, the company had to allow itself a margin in the utilization of the land, especially where it bordered the railroad with its probable deleterious effect upon residential character. At the same time, 41 percent of the population of the Gardens live in apartments. That is too large a percent to give the homogeneity that is desirable in a neighborhood community of this size.

5. From an architectural standpoint, the development pivots upon the market square, thus revealing the village motif in the mind of the planner. The residents tried to use the market square as their civic center, but it did not work very well. It is plain to see now that the community life would have been advanced if more architectural attention had been paid to a civic and cultural center. That is now represented by the flagpole green. A grouping of the neighborhood institutions around a central open space would have been an improvement over the present physical plan, as respects the development of community life.

## FOREST HILLS GARDENS, N.Y.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | LOT SIZE |
| RESIDENTIAL | 91.0 | 64.1 | ORIGINAL LAYOUT ALL |
| BUSINESS | 1.0 | .7 | IN PARCELS WITH 20 FT. |
| TOTAL | 92.0 | 64.8 | FRONTAGES. |
| PUBLIC AREAS | | | NORMAL AREA – 2000 SQ. FT. |
| SCHOOL SITE | 1.8 | 1.3 | SOLD LATER IN PARCELS |
| PARKS & PLAY AREAS | 3.2 | 2.2 | WITH FRONTAGES NOT |
| TOTAL | 5.0 | 3.5 | LESS THAN 50 FT. |
| STREETS | | | |
| 40-50-60-70 FT. | 45.0 | 31.7 | STREET LENGTH-6.5 MILES |
| TOTAL | 45.0 | 31.7 | |
| GRAND TOTAL | 142.0 | 100.0 | |

BUSINESS AND STREET AREA SCALED FROM PLAN
AREA ZONED FOR BUSINESS UNDER NEW YORK CITY ORDINANCE - 12.5 ACRES OR 8.8 % OF TOTAL
SCALE OF PLAN: 1" = 100'

Table 15.

There are several other factors that may be considered in relation to the physical plan. The value of the curved minor streets as a physical discouragement to speed and, consequently, to through traffic has been fully realized by the community. Could the problems of traffic have been fully predicted when the Gardens Corporation still held title to the through streets, provision could have been made to relegate through traffic to the bounding streets. A very definite adverse effect has been felt on property values for a distance of one-half to one block in from the periphery, at which point the Gardens restrictions terminate. The indication that the railroad right-of-way has definitely affected the desirability of property adjacent to it is found in the higher degree of vacancies and inferior character of the development along Burns Street. The opinion was also expressed by the secretary of the Gardens Corporation that rear service lanes would have been highly desirable throughout the entire area, both in the economy of daily scavenger service and in the avoidance of the objectionable features of front street collection.

*Housing.*—Much of the charm of the Gardens has been obtained through the consistent and harmonious use of building materials. As already indicated, the

homes built by private owners exceed in size and cost those built originally by the Homes Co. The houses are largely of brick, a few of stone, all with roofs of flat, red tile, which gives a unity and distinctive character to the development both on the ground and from the air. Detatched single-family homes have been built largely on lots consisting of three or four or more parcels. However, the selling of land in the form of parcels, no one of which is large enough to allow the erection of a house, is a distinct defect. In spite of efforts on the part of the developer, stray single parcels will be left between built-up lots which must either be purchased by or deeded free to one or both of the abutting property owners, or remain to be maintained by the developer or subsequent organizations. While not serious in the Gardens, this problem has arisen. There has been an attempt to sell a number of the group houses bordering the greenways. The depression has had its effect, and this, together with their large size and high value, makes these houses unsuited for the family desiring to live either in a small group house or in a large detached dwelling.

*Community Facilities.*—Mr. Perry makes the following observations regarding some of the aspects of community life in the Gardens:

> Probably the most important reason for the unusual success which this development has attained is due to the completeness of its provisions for the various aspects of family life. In the first place it provides attractive homes in a well-landscaped setting within 30 minutes or so of the working place of the average resident. The scheme provided for education, religious worship, social and civic opportunities. The very uniqueness of its plan at the time it was first presented attracted a home-loving clientele. The residents have not only utilized in a full degree the provisions of the development scheme, but they have built upon the basis for further community life which that scheme offered. Two expressions of this fact are to be found, in the $250,000 community house which they built, and in the Gardens Corporation in which they have organized to protect their rights and preserve the original character of the development.
>
> Market square is ideally located as a business district—at the very portal of the development. It was not made large enough, however, to enable the company to obtain all of the increment from business frontage which the merchandising capacity of the residents created. Since, however, the market square is located only a short block from a larger and more adequate local business district, the convenience of the residents, as respects local shopping, has been entirely preserved.

It might be added that the size of the school site is inadequate and that the crescent block lying directly in front of the school site is much needed for a play area. While this is in private ownership, it still remains vacant for a rather interesting reason. As originally sold under restrictions, its use for apartments was permitted. However, the New York Zoning Ordinance which covers the gardens, although much less restrictive in all other sections of the development, holds this block in the single-family residence district. Although pressure has been brought to bear to grant an exception, the zoning has so far been upheld, thus preventing an undesirable development in the center of the gardens and rectifying the lack of private restrictions on this area.

In spite of the charm of Station Square, the arcades over the sidewalk have been considered a definite factor in preventing its full realization as business frontage, the merchants desiring more openness and more prominent display windows than are permitted. Also, the Square has become a place of traffic movement, which permits too small an amount of parking for the amount of store frontage provided.

The strength and activity of the gardens as a unified community are indicated by the number and diversity of the community organizations. These include the Gardens Corporation of home owners, the Gardens Taxpayers Association, the Women's and Men's Clubs open to all residents, the Gardens Players, also open to all those interested, the Celebrations Association, which prepares entertainment for the Fourth of July and Christmas, the Parent-Teacher Association, "the Church and the Gardens," and two churches. The fact that the population is made up almost entirely of a relatively higher-income group must, of course, be considered in the above community life.

*Appearance.*—Forest Hills Gardens, from the standpoint of esthetics, is the best of the communities visited. Several points, however, must be considered in making this statement. First, no expense was spared to make it a fine example of community planning. Second, the type of population subsequently attracted by its beauty has rigidly upheld the standards of the developers. Third, there is the beauty of maturity which only time can give.

The sense of scale which has been attained is exceptionally good. Station square with its old-world atmosphere is an architectural gem, which forms an impressive entrance to the gardens behind it and is marred only by the ever-present automobile traffic. The relationship of the mature street trees and plantings to the street width and house facades is excellent. Curving streets form constantly changing street pictures of great charm. Endings of vistas have been effectively treated with just enough casualness in house groups and arrangement to prevent studied appearance. The harmonious treatment of house walls and roofs adds the necessary further note of consistency to the arching street trees and the beautifully maintained lawns. A certain feeling of openness is lost by the high shrub plantings which have been used in the central park strips and between the greenways, detracting somewhat from the simplicity of the street treatment. However, the walls and entrance gates

which have been used in front of the group houses on the greenways form a pleasant variation in the street picture and create a degree of privacy for the homes behind them. Looking back toward the square from the greenways, the tower of the inn suggests the presence of a village center, giving a feeling of visual and functional unity.

Probably the least successful building in the entire gardens is the public school. The style and character given to the square were attempted in the design of the school but have not been realized. A new church on North Greenway has introduced a foreign note into the scheme and, while interesting in itself, fails to harmonize with the established character of the community. It is interesting to note the unsuccessful attempts that have been made by developers of land around the periphery to emulate the unified charm of the gardens, which retains its individuality and attractiveness in spite of changing conditions and outside influences which have affected it.

*Control.*—It has already been mentioned that Forest Hills Gardens is under the jurisdiction of Greater New York. However, it has a government of its own in the form of the Gardens Corporation. On January 1, 1923, the Sage Foundation conveyed to the Gardens Corporation the "streets, parks, etc., and rights and powers with regard to restrictions." This organization of home owners is largely responsible not only for preserving the character of the gardens itself but for extending restrictions to parts of the development at its periphery. It has sponsored the community activities; rigidly enforces the deed restrictions; still holds title to all the streets except Burns, Continental, and Ascan, which carry through traffic; maintains traffic lights at various critical intersections; maintains the park areas, street trees, and planting strips; handles street cleaning and snow removal; holds title to all sewer facilities; handles all matters of policy and legal questions which concern the community; and has the power to levy assessments against the property owners for its services. The officers of the corporation are elected and serve without pay. Forest Hills Gardens thus functions as a self-governing separate community.

*Other Considerations.*—The following observations by Mr. Perry concerning the stability of the development are of interest:

> Of course values have been affected by the depression, but otherwise they have held pretty well, and this stability must be credited to the whole development scheme and to the basis which has permitted the residents to organize in a property-owners' association which has worked effectively in the preservation and enhancement of the development's character.
>
> The restrictions as to density and use have been threatened several times, but so far the Gardens Corporation has been able to maintain, through constant watchfulness, the restrictions which were assigned to them by the promotion company.
>
> The business increment created by the development, has * * * only been partially reaped by the promotion company. The increment on residential values has been gained mainly by the owners of the various properties.
>
> Because of the desirability of the dwellings, the rate of turnover is small—probably less than 5 percent per year in the single-family dwellings. It is probably higher in the apartments.

The financial history of Forest Hills Gardens is of great interest. It has been well recorded and is furnished by Mr. Perry, who has taken an active interest in following up the progress of the development and who interpreted the following information:

> The minutes of the trustees of the Russell Sage Foundation for April 24, 1922, record the final sale of the Foundation's interest in the Sage Foundation Homes Co., the subsidiary which developed Forest Hills Gardens. The amount realized under this sale was $3,130,000. The situation which led to the sale is stated as follows:
>
> "The Sage Foundation has practically carried to substantial completion the Forest Hills Gardens enterprise and has accomplished every purpose for which it embarked on this enterprise, save only its hope of making it successful from a mere business point of view; that is, financial profit. This has been largely prevented by reason of the war and post-war period. For the foundation to hold the property longer in order to sell the remaining lots involved the maintenance of a considerable organization and larger overhead charges than could be justified."
>
> On April 15, 1924, the minutes show this further item: "Principal account—loss on investment, Sage Foundation Homes Co., $360,800."
>
> That amount may be regarded as the financial contribution which the foundation made to the art of site planning through its Forest Hills undertaking. In view of the fact that it had at one time as much as $4,000,000 in the project and that the development had a total assessed valuation in 1935 of $18,623,042, this deficit is not unseemly. Indeed the trustees feel that they were fortunate in getting out with no greater loss. When there is taken into consideration the wide influence which Forest Hills Gardens has undoubtedly exercised upon residential standards, the contribution is not disproportionate to the social service it rendered.
>
> I have been interested in trying to determine for myself some of the factors which probably contributed to the final financial result. Without any detailed study of the accounts or the various operations, the following methods and circumstances appear, on the surface, as having had a bearing upon the matter of profits.
>
> 1. The physical layout, in providing stores only in station square, did not make full use of the increment arising from business frontage. Probably ninety per cent of the local purchasing is done in the business district (on Austin Street) outside of the development. Of course, however, few developments in 1910 were making full use of the business increment.
>
> 2. Method of exploitation. Many of the lots were sold early and held by their owners for later construction. Thus in such cases the owners, instead of the company, reaped the increment (some lost) created by the exceptional character of the development. If more lots had been held and sold only in connection with their improvement, the company would have realized more of the later increment and have spread its overhead over a larger construction load. Against this,

however, would have to be charged the taxes and other carrying charges. One could be positive as to this point only after a study of the actual operations.

3. The cost of preparing the land, grading, electrical conduits, sewer system, street lights, paving, and landscaping, while contributing greatly to the attractiveness of the development, was nevertheless unpredictably high. Spreading this cost over the whole enterprise was not an easy matter. When in 1922 the foundation sold out its interest in the development en bloc while there were still houses and lots to be exploited, it meant of course an abandonment of possible future profits as well as an insurance against greater losses. The trustees felt that the expense of the organization which would have to be maintained if they carried on further, created too great a risk to warrant a continuance of their part in the enterprise.

4. The structure of the management. A charitable and educational institution holding the bag, and a business management effectively in the hands of a subsidiary that does not stand to lose, are not the kind of auspices which are calculated to make a rigorous use of the profit motive. In this case there was an educational element in the objective of the enterprise, and it justified expenditures upon embellishment and upon the satisfaction of other aesthetic objectives which a strictly commercial company would probably have avoided. When the educational objective had been fully achieved, the foundation, somewhat discouraged over the possibility of recouping its losses and indeed a little fearful of increasing them, naturally turned away from further participation in real estate in order to devote its full resources to the field of social work where it was very much at home and where insistent calls were being made for its help.

These are the personal opinions of the writer.

At the beginning, the Sage Foundation Homes Co. endeavored to stamp the development with a certain character by building, on widely distributed lots, a variety of tasteful and moderately priced dwellings, purchasable in easy installments. These were mainly in planned groups of buildings, but there were some individual structures. Some of those early dwellings were sold for just under $6,000, a price which certainly did come within "moderate means," even in those days. The selling plan made it possible for lot owners to construct their own houses, subject to architectural restrictions and regulations. The unusual street layout and the charm of Grosvenor Atterbury's designs made a most favorable impression upon home seekers. Persons with larger and larger incomes vied with each other in erecting expensive structures.

The natural effect of such competion was to cause a gradual increase in property values, a movement that was also greatly accelerated by the rise in construction costs and the widespread real-estate boom which marked the predepression period.

The fact that the gardens homes did eventually rise above the "modest means" level where they were first placed was due entirely to natural and unforeseeable causes. Since the undertaking was by purpose and character set upon an economic basis, it had to respond to economic forces. That its product did create a strong demand is an indication of success rather than failure. Architecturally, the development has had a wide influence upon residential developments. Even more far-reaching—it may some day be discovered—is its contribution to what the English call "site planning" but which we might name building happy neighborhoods.

The following summary of development costs was compiled by residents of the gardens and published in April 1915:

| | |
|---|---|
| Grading streets | $80,000 |
| Paving | 200,000 |
| Water mains | 70,000 |
| Sanitary sewers | 40,000 |
| Storm drains | 62,000 |
| Curbs | 73,000 |
| Gas | 68,000 |
| Conduits | 70,000 |
| Sidewalks | 66,000 |
| Parking places | 90,000 |
| Decorative features (lamp posts, fountains, pools, parks) | 100,000 |
| | 919,000 |

The station at Forest Hills Gardens is constructed of brick and concrete with tile roof and cost $50,000, of which the railroad paid $10,000, the development companies paying the balance. Forest Hills Inn, opposite the station, is of similar construction, and cost three-quarters of a million.

# PART I—SECTION 3
# CONCLUDING DISCUSSION

The planned town, like any other planned project, owes its origin and its first form to its expected ability to serve a function, and it owes its survival to its actual ability so to serve, under the changing conditions of its existence.

Naturally, no town will actually be built according to a plan unless there exists some person or group of persons having the unified financial power and the effective belief that the results will be worth the expense.

Most of our communities which have grown "naturally" are coming only slowly to the realization that comprehensive planning is worth its cost in applied intelligence and in regulation of the individual. Moreover, the existing results of competing individual effort are too costly to abandon or destroy, and very difficult fundamentally to improve. Therefore, examples of comprehensive planning actually constructed to an extent justifying conclusions as to how the planning has worked in *practice* are unusual in the ordinary loosely organized long-standing community. In this country, they are mostly to be found where the community was planned from the beginning and where the planning and constructing entity was something other than the organized community itself. These entities have been, for the most part:

1. Manufacturing organizations.
2. Governmental organizations.
3. Real estate organizations.
4. Philanthropic organizations.

In the present study, the communities founded by industry constitute 53.5 percent of the total; communities founded by private developers for urban residential purposes constitute 25.7 percent; those founded for rural and agricultural residential purposes, 10.4 percent; war housing towns and villages, 7.6 percent; and miscellaneous developments, 2.8 percent.

## Objectives of Planned Communities

### By Industrial Organizations

We will consider first the planned communities constructed by manufacturing organizations.

Many important industries have established "company towns." These have reached their greatest development in the United States, and are estimated to contain in total over 2 million inhabitants. We shall discuss here, however, only those which seem to offer some lessons in the actual effectiveness of some form of comprehensive planning, which at once eliminates the typical "mill village" from consideration.

In general, the following objectives, which are not mutually exclusive, have been the most important in the minds of those responsible for the company towns. It is noteworthy that financial profit from the enterprise is only of secondary interest and is often ignored.

1. To select a location conveniently related to raw materials, markets, water or other power, or good industrial water supply, and having a favorable climate. Also, on occasions, to seek a location offering an existing labor supply instead of attempting to attract such a supply, as hereafter discussed.
2. To attract a supply of labor, adequate in quantity and quality.
3. To stabilize the labor supply and minimize the labor turn-over by providing facilities for family life (in contradistinction to factory conditions) at a cost within the earning power of the workers. This may mean meeting the present standard of living of the workers, or it may mean raising this standard of living.
4. To escape the undue dominance of "organized labor" in an existing community.
5. To escape the undue competition for labor in an existing community, the high land values and high taxes, and the consequent high wages and high operating costs without commensurate return, and in general to have a more free hand, unhampered by adverse conditions due to past developments.

If these objectives are intelligently and honestly sought, they may produce a stable and contented community.

As we have said, however, the "company town" is financially an adjunct of the factory, and shortsighted desires of the factory may readily harm the town. In the relatively few cases among the towns selected for study where such shortsightedness has prevailed, one or more of the following objectionable features have been noted. They arise largely from the consolidation in a single agency of the functions of landlord, employer, and town manager. These are not all mutually exclusive, but react in many ways on one another.

1. Poor quality of housing due to cheap construction.
2. Poorly planned and inadequate provision for recreation.

3. Too small an area and population for an adequate social life.

4. Insufficient attention to management.

5. A policy of housing the greatest possible number of workers in each dwelling, with bad social results.

6. The use of low rents, based on insufficient accommodations, as a lever for low wages, so making a circle of substandard living.

7. Tendency to give overtime work and such special opportunities exclusively to tenants of company houses.

8. Similarly, tenancy of company houses depending on "satisfactory" behavior in the factory.

9. Company control through subsidy of schools and churches.

10. Company control of stores, tending to monopoly and too high prices.

Instances of every one of these disadvantages can be found, sometimes in aggravated form, but most of the companies, quite apart from any question of honesty or philanthropy, are intelligent enough to see that such disadvantages would, in the long run, destroy the very service to the factory which the town was built to perform. In general, the advantages of initial capital, skilled planning, competent financing, unified management, and reasonable continuity of policy in carrying out a predetermined plan have given to the inhabitants better living facilities within their means than they could have got for themselves in a new venture or, often, in any existing community. That this is not even more frequently the case is due in part to the fact that the new "company town," like any new structure economically considered, has to carry the whole amortization of its investment, whereas the old towns have written off, consciously or unconsciously, much of the first cost of utilities and houses,

**PLANNING FACTORS & EXISTING CONDITIONS OF COMMUNITIES FOUNDED FOR INDUSTRIAL PURPOSES**

SYMBOLS
✓ - GOVERNING FACTORS NOT QUANTITATIVELY MEASURED
Z - ZONING ORDINANCE
B - LOCAL BUILDING CODE
CO - DEVELOPMENT COMPANY
US - FROM 1930 U.S. CENSUS

| | ALCOA TENN. | CHICOPEE GA. | CRADOCK VA. | ECLIPSE PARK DELOIT, WIS. | FAIRFIELD ALA. | FIRESTONE PARK AKRON, OHIO | GOODYEAR HTS AKRON, OHIO | HERSHEY PA | HILTON VA. | HOPEDALE MASS. | KAPUSKASING ONT, CANADA | KAULTON ALA. | KINGSPORT TENN. | KUTTLER PA. | KOHLER WIS. | LONGVIEW WASH. | LUDLOW MASS. | MORGAN PARK DULUTH, MINN | NORRIS VILLAGE (BROOKLAWN) N.J. | NORRIS TENN. | SILVERTOWN GA | TEMISKAMING QUE, CANADA | TORRANCE CAL. | UNION PARK CHESTER WILMINGTON, DEL | VANDERGRIFT PA. | WHITINSVILLE MASS. | YORKSHIP VIL. CAMDEN, N.J. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FOUNDING AGENCY | IND. | IND | GOV | IND. | IND | IND | IND. | IND | GOV | IND | IND | IND | IND | IND | IND. | IND. | IND. | IND. | GOV | GOV | IND. | IND. | IND | GOV. | IND. | IND. | GOV |
| DATE OF ESTABLISHMENT | 1919 | 1927 | 1918 | 1918 | 1910 | 1916 | 1913-17 | 1903 | 1918 | 1841-56 | 1922 | 1912 | 1918 | 1918 | 1916 | 1923 | 1868 | 1915 | 1918 | 1934 | 1929 | 1919 | 1912 | 1918 | 1895 | 1774 | 1918 |
| AREA IN ACRES PLANNED | 7500 | | 310 | 53 | 350 | 800 | 800 | | 100 | | 221 | 130 | 1550 | 595 | | 5000 | | | 140 | | 1000 | 8000 | 2279 | 58 | 640 | | 225 |
| " " " DEVELOPED | 1000 | 144 | | | 880 | 400 | | | | | | | 2200 | 40 | 1000 | | | 241 | 100 | 300± | 400 | 400 | 4000 | 58 | | | 225 |
| POPULATION PLANNED | 50000 | | 6175 | 1450 | 5000 | | | | 3000 | | 2500 | | 10000 | | | 50000 | | | | 2000± | | 2-3000 | 10000 | 2500 | 5000 | | |
| " EXISTING | 5600 | 1025 | 3500 | 725 | 11059 | 3800 | 5700 | 2800 | 1750 | 3068 | 3350 | 600 | 20000+ | 455 | 1850 | 12000 | 8569 | 2000 | 2000 | 1300± | 3200 | 2500 | 8270 | 2600 | 12000 | 7100 | 6500± |
| RESIDENTIAL LOTS PLANNED | | 500 | 1253 | 363 | 926 | 1600 | 1900 | | 600 | | 794 | 130 | 1575 | 220 | | | | 348 | 447 | | | | | 506 | 1081 | | 2000 |
| " " DEVELOPED | 1513 | 217 | 760 | | 3000 | | 1900 | | 473 | | 504 | 122 | | 122 | 430 | | | 509 | 650 | 350 | 695 | | 1800 | 532 | | 1200 | |
| BUSINESS LOTS PLANNED | | 10 | 60 | 435 LIN FT | 330 | 25 | 20 | | 20 | | 275 | | 830 | 430 LIN FT | | | | 1210 LIN FT | 72 ACRES | | | | | 20 | 41 | | |
| " " DEVELOPED | 145 | 1 | | | 418 | | 20 | | 7 | | 142 | | | | 18 | | 150 | | 3 ACRES | 5 | 11 | | 200 | 13 | | 440 LIN FT | |
| EXISTING CONDITIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DWELLING UNITS CONSTRUCTED | 1513 | 217 | 707 | | 2500 | 935 | 1426 | 762 | 473 | 750 | 500 | 122 | | 122 | 375 | | 1388 | 509 | 550 | 350 | 697 | 317 | | 532 | 2400 | 1200 | 1600 |
| BUSINESS " | | 1 | 17 | | 200 | | 16 | 18 | 7 | 4 | | | 200± | 1 | | | | 200 LIN FT | 15 | 5 | 11 | | | 13 | 41 | 50 | 34 |
| % AREA BUILT UP TO DATE | 28 | | | | 100 | 60 | 68 | | 100 | | | | 95 | 66 | 80 | 25 | | | 71 | 30 | 40 | | 100 | 100 | 100 | 100 | 95 |
| % SELF CONTAINED AS TO EMPLOYMENT | 97 | 100 | 1 | 0 | 95 | 0 | 0 | 90 | 1 | 100 | 100 | 99 | 100 | 100 | 99 | 100 | 30 | 90 | 5 | 27 | 100 | 95 | 75 | 0 | 100 | 80 | 1± |
| % SELF " " TRADING | 10 | 50 | 60 | | 50 | 60 | 60 | 90 | 50 | 10 | 100 | 65 | 90- | 50 | 50 | 100 | 10 | | 33 | 70 | 50 | 5± | 80 | 50 | 90 | 40 | 1± |
| % NATIVE WHITE POPULATION | 80 | 100 | 95 | | 37 | 99 | 98 | 97 | 100 | 93 | 90 | 40 | 93.5 | 70 | 90 | 83.2 | 30 | ✓ | 99 | 100 | 92 | 70 | 98 | 90 | 71.9 | 75 | 100 |
| % FOREIGN BORN " | 0 | 0 | 5 | | 4 | 1 | 2 | 3 | 0 | 7 | 10 | 0 | 1.4 | 10 | 10 | 16.3 | 70 | ✓ | 1 | 0 | 0 | 30 | 2 | 10 | 21.1 | 25 | 0 |
| % COLORED " | 20 | 0 | 0 | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 5.1 | 20 | 0 | 5 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 14 | 0 | 0 |
| % HIGH INCOME GROUP | 0 | | 84 | | 25 | 5 | 13 | 8 | 37 | ✓ | 0 | 0 | 30 | | | | | | 4 | | 2 | 4 | 5 | 10 | 50 | | 1 |
| % MEDIUM " | ✓ | ✓ | 15 | ✓ | 40 | 95 | 85 | 81 | 38 | ✓ | 15 | 0 | 60 | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | | 93 | 24 | 70 | 80 | 30 | ✓ | 75 |
| % LOW " | ✓ | ✓ | 1 | | 35 | 0 | 2 | 12 | 25 | | 60 | 100 | 10 | ✓ | ✓ | ✓ | ✓ | ✓ | 86 | | 5 | 72 | 25 | 10 | 20 | ✓ | 24 |
| % DETACHED - ONE FAM DWELLING | 100 | 100 | 90 | | 96 | 99 | 99+ | 90 | 40 | 25 | 80 | 100 | 94 | ✓ | 99 | US 97.1 | 80 | 26 | 24 | 86 | 87 | 0 | 90 | 5 | US 93.2 | 3 | 42 |
| % SEMI DETACHED - ONE FAMILY | 0 | 0 | 5 | | 1 | 1 | 1- | 9+ | 44 | 75 | 11 | 0 | 4 | ✓ | 2 | | 20 | 9 | 38 | 6 | 12 | 48 | 1 | 250 | | 25 | 207 |
| % ROW OR GROUP - ONE FAMILY | 0 | 0 | 4+ | | 0 | 0 | 0 | 0 | 16 | 0 | 5 | 0 | 1+ | | 0 | | 0 | 12 | 38 | 0 | 0 | 50 | 1 | 73.5 | | 72 | 71.0 |
| % MULT-FAMILY - TWO OR MORE | 0 | 0 | 4 UNITS | | 3 | 0 | 0 | 1- | 0 | 0 | 4 | 0 | 23 UNITS | | 0 | US 2.9 | 6 | 53 | 0 | 8 | 1 | 2 | 8 | 1.0 | US 6.8 | 1 APT. | 3.9 |
| % HOME OWNERSHIP BY OCCUPANT | 6 | 0 | 75 | 60 | 93 | 66 | 66 | 80 | 80 | 2- | 64 | 7 | 60 | 0 | 99 | 41.4 | 65 | 0 | 33 | 0 | 0 | 0 | 60 | 65 | 60 | 7 | 40 |
| AV VAL. HOMES-1936-IN $1000 | 8 | 28-35 | 33 | | B-25 M-25 | 4-6 | 5 | 5 | 31 | COST 6.5 | 3-12 | 8-13 | 25 | | 5-12 | 3 | 25 | | 3 | | 3 | 15-6 | 25-4 | 4 | 4 | | 2.8 |
| AVE. RENTAL PER MONTH (DOLLARS) | 6-27 | 10-126 | 225 | | 25 | 25-50 | 30 | 8-45 | 30-32 | 15 | 17-100 | 63 | 15-40 | 10-13 | | 25 | 15-30 | 10-35 | 25 | 14-45 | 745 | 10-30 | 25-40 | 35 | 29 | 6-22 | 24-20 |
| DETACHED DWEL.-LOT SIZE-TO FT | 6250 | 8450 | 5000 | 5000 | 6500 | 5400 | 6250 | 6000 | 5850 | NOT SUB DIVID-ED | 6000 8000 | 8000 | 7500 | 4000 | 6000 | 6000 | 5000 | NOT SUB-DIVID-ED | 5100 | 15000 | 9000 | NOT SUB-DIVID-ED | 6500 | 5000 | 3000 | 5000 | 3150 |
| SEMI-DETACHED " " " " | | | 3000 | | | | | | 3600 | | | | 7500 | 4000 | | | 5000 | | 3400 | | | | | 4500 | | 5000 | 2453 |
| ROW OR GROUP " " " " | | | 2320 | 2500 | | | | | 1600 | | | | 4500 | 2000 | | | | | 1600 | | | | | 1900 | 3000 | 2500 | 1260 |
| MULTI-FAMILY " " " " | | | 1875 | | 2500 | | | | | | | | 2750 | | | | | | | | | | | | | | 1600 |
| AVE DENSITY PER NET ACRE | 7 | 51 | 28 | 9-10 | 67 | 6-8 | 7 | 7 | 9+ | 9- | 6 | 55 | | 9+ | 66 | 6-7 | 9- | 9± | 13 | 3± | 5- | | 7- | 16 | 145 | 9- | 30 |
| MAJOR STREET WIDTH FT | 100 | 60 | 120 | 80 | 100-140 | 80 | 100 | | 100 | 50 | 38-100 | 100 | 60-100 | 60 | 120 | 120 | 495 | 80 | 80 | | 66 | 80 | 100 | 210 | 80 | 60 | 160 |
| ROADWAY " | | 44 | 2-22 | 2-18 | 64 | | 60 | 60 | 24 | 34 | | 2-20 | 2-18 28-42 | 30 | 2-28 | | 28-40 | 50 | 60 | 24 | 36 | 38 | | 2-24 | 40 | 22 | 2-18 |
| SECONDARY STREET WIDTH " | 60-80 | | 60+ | 60 | 60-80 | 50 | | 40 | | 40 | 66 | 80 | 60 | 50 | 65-75 | 60-100 | 495 | 50-60 | 66-75 | | 50 | 50 | 80 | 50 | 60 | 50 | 62 |
| ROADWAY " | | | 1-22 | 26 | | | | 30 | | 23 | | 30 | 24-27 | 22 | 28 | 60 | 28-40 | 30 | 26 | 21 | 26 | 24 | | 30 | 28± | 22 | 28 |
| MINOR STREET WIDTH " | 40-50 | 44 | 40 | 50 | 50 | 40 | 58 | | 50 | 30 | | 50 | 40-50 | 50 | 50 | 50 | 495 | 50 | 40-50 | | 40 | 38 | 60 | 40 | 40-80 | | 48 |
| ROADWAY " | | 20 | 18 | 18 | 22 | | 30-80 | | 20 | 20 | | 22 | 24 | 18 | 24 | 24-25 | 28-40 | 22 | 20 | 18 | 22 | 20 | | 20 | 18 | | 18 |
| ALLEYS IN BUS OR RES. AREA WIDTH FT | 8-20 | NO | 8,12-14 | NO | 8,R-15 | NO | NO | B,R;15 | NO | B,R-10 | B;-25 | B,R 15 | B-20 R-15 | 40 | B-15 | B,R 20 | NO | B,R-14 | B,R-40 | NO | B,R-15 | NO | B,R | NO | B,R-16 | B,R | B,R 10 |
| ZONING OR BUILDING CODE | NO | NO | NO | Z,B. | Z,B | Z,B | Z,B | NO | NO | NO | Z,B | NO | B | NO | Z. | B. | Z,B. | Z,B | B | NO | B. | NO | Z,B. | Z,B | NO | B | B. |
| PRIVATE DEED RESTRICTION | ✓ | NO | ✓ | NO | NO | ✓ | ✓ | ✓ | ✓ | NO | NO | NO | ✓ | NO | ✓ | ✓ | NO | NO | ✓ | NO | NO | NO | ✓ | ✓ | NO | NO | ✓ |
| OTHER CONTROL | NO | CO. | NO | NO | NO | NO | NO | CO | CO | CO | NO | CO. | CO. | CO. | CO. | NO | CO | CO | NO | TVA | CO. | CO | NO | NO | NO | CO | NO |

Table 16.

## PLANNING FACTORS & EXISTING CONDITIONS OF COMMUNITIES FOUNDED FOR RESIDENTIAL PURPOSES

SYMBOLS
✓ - GOVERNING FACTORS NOT QUANTITATIVELY MEASURED
Z - ZONING ORDINANCE
B - LOCAL BUILDING CODE
CO. - DEVELOPMENT COMPANY
H.A. - HOMES ASSOCIATION

| | AMERICAN FALLS IDAHO | CLEWISTON FLA. | COLUMBUS KY. | CORAL GABLES FLA. | COUNTRY CLUB DIV. KANSAS CITY, KAN. | CHATHAM VILL. PITTSBURG, PA. | FOREST HILLS GAR. L.I., N.Y. | MARIEMONT OHIO | PALOS VERDES CAL. | RADBURN N.J. | RIVER OAKS HOUSTON, TEX. | ROLAND PARK BALTIMORE, MD. | SHAKER HEIGHTS CLEVELAND, OHIO | ST FRANCIS WOOD SAN FRANCISCO, CAL. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FOUNDING AGENCY | GOV | REAL | PHIL. | REAL | REAL | PHIL | PHIL | PHIL | REAL | PHIL | REAL | REAL | REAL | REAL |
| DATE OF ESTABLISHMENT | 1924 | 1925 | 1927 | 1923 | 1907 | 1932 | 1911 | 1923 | | 1929 | 1925 | 1912 | 1915 | 1912 |
| AREA IN ACRES PLANNED | | 2800 | 80 | 10000 | | 43 | 142 | 253 | 3225 | 1005 | 1000 | 4-500 | | 125 |
| " " " DEVELOPED | | | 80 | | | 43 | | | 1800 | 200 | 500 | 2000 | 4000 | 125 |
| POPULATION PLANNED | 10,000 | 30,000 | 500± | | | | | 10,000 | 30,000 | 25000 | | | | |
| " EXISTING | 1000 | 2284 | 513 | 7000 | 25,000 | 700 | 5000 | 1600 | 775 | 1450 | 2500 | 9000 | 20000 | 1800± |
| RESIDENTIAL LOTS PLANNED | 1114 | 7537 | 116 | | | | 1765 | 759 | 5200 | | | | | 577 |
| " " DEVELOPED | 619 | | | | 7500 | | | 700 | 1000 | 375 | 750 | 2500 | | |
| BUSINESS LOTS PLANNED | 292 | 1698 | 860 LIN. FT. | | | | | | | | | | | |
| " " DEVELOPED | 382 | | | | 500 | | | 6020 LIN FT. | 6 | 13 | | | | 0 |
| EXISTING CONDITIONS | | | | | | | | | | | | | | |
| DWELLING UNITS CONSTRUCTED | | | 116 | | | 197 | 670 | 465 | 213 | 462 | | | | 450 |
| BUSINESS " " | | | 860 LIN. FT. | | | 4 | | 2365 LIN. FT. | 6 | 10 | | | | |
| % AREA BUILT UP TO DATE | | | | 2.5 | 67 | 100 | 100 | 50 | 56 | 20 | 56 | 100 | 95 | 80 |
| % SELF CONTAINED AS TO EMPLOYMENT | 100 | ✓ | | 10 | 1-5 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 5 | 0 |
| % " " " " TRADING | 75 | ✓ | | 10 | 33 | 0 | 8 | 10 | 20 | 75 | 0 | 1- | 15 | 0 |
| % NATIVE WHITE POPULATION | 90 | 50 | ✓ | | 100 | 100 | 100 | 100 | 100 | 98 | 100 | 100 | | ✓ |
| % FOREIGN BORN " | 10 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | | 0 |
| % COLORED " | 0 | 50 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| % HIGH INCOME GROUP | 10 | ✓ | | | ✓ | 0 | 24 | 25 | 10 | 15 | ✓ | 25 | 15 | ✓ |
| % MEDIUM " " | 40 | ✓ | | | ✓ | ✓ | 75 | 70 | 80 | 65 | ✓ | 50 | 60 | ✓ |
| % LOW " " | 50 | ✓ | ✓ | | 0 | 0 | 1 | 5 | 10 | 20 | 0 | 25 | 25 | 0 |
| % DETACHED - ONE FAM. DWELLING | 98 | | 100 | 99 | 100 | 0 | 75 | 42 | 99.5 | 55 | 100 | 90 | ✓ | 100 |
| % SEMI-DETACHED - ONE FAM. " | 0 | | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 30 | 0 | 5 | ✓ | 0 |
| % ROW OR GROUP - ONE FAM. " | 0 | | 0 | 0 | 0 | 98 | 19 | 37 | 0 | 0 | 0 | 5 | ✓ | 0 |
| % MULTI-FAMILY - TWO OR MORE FAM. | 2 | | 0 | 0 | APART. GROUP | 0 | 1 | 21 | .5 | 15 | 0 | 0 | ✓ | 0 |
| % HOME OWNERSHIP BY OCCUPANT | 60 | ✓ | ✓ | 75 | 85 | 0 | 75 | 20 | 90 | 65 | 98 | 90 | ✓ | 100 |
| AV. VAL. HOMES - 1936 - IN $1000 | 1-5 | | | 9 | 6-300 | | 37 | 10-30 | 4-15 | 10 | 20-25 | 20 | | |
| AVE. RENTAL PER MONTH - (DOLLARS) | 10-25 | | | 50 | 50-250 | 47-87 | 150-200 | 21-125 | 30-150 | 14-20 / RM. | | 75-225 | | |
| DETACHED DWEL. - LOT SIZE SQ. FT. | 8100 | 5400 12375 | 20000 | 50-500 FRONT | 5000 5-10 AC. | NOT SUB-DIVID-ED. | 4000+ | 6000 9600 | 8000 12000 | 4300 | 8125 14 AC. | 12000+ | 10000 150000 | 5000 6000 |
| SEMI-DETACHED " " " " | | | | | | | | 3000 | | 4300 | | | 9000 12000 | |
| ROW OR GROUP " " " " | | | | | | | | 2000 | | 1700 | | | | |
| MULTI-FAMILY " " " " | 3125 | | | | | | | | | | | | 4000 6000 | |
| AVE. DENSITY PER NET ACRE | 5+ | | 2.2 | | | 12 | | | 3.5 | 10 | 2 | 3-6 | | 8 |
| MAJOR STREET WIDTH FT. | 120 | 100 | 100 | 100 | | | 70-80 | 80-150 | 100-200 | 200 | 90-100 | 120 | 120-200 | 100 |
| ROADWAY " " | | 2-24 | 40 | | | | | | | 2-20 | 2-20 | 2-28 | | 40 |
| SECONDARY STREET WIDTH " | 80-100 | 70-80 | 60 | 70 | | 50 | 60 | 50-60 | 80 | 120-140 | 80 | 60 | 86-100 | 60-80 |
| ROADWAY " " | | 26 | 30 | | | 22-24 | 38 | | | 25-35 | 40 | 30 | | 30 |
| MINOR STREET WIDTH " | 50 | 60 | 60 | 60 | | 40 | 30-50 | 40-50 | 30-60 | 30 | 60 | 40-50 | 45-60 | 50 |
| ROADWAY " " | | 18 | 30 | 20 | | 18-20 | 20-22 | | | 18 | 30 | 20 | | 22 |
| ALLEYS IN BUS. OR RES. AREAS WIDTH FT. | B,R-20 | B.-20 | B,-20 | B,-20 | | NO | NO | B.R-20 | B. | NO | NO | R-20 | NO | NO |
| ZONING OR BUILDING CODE | NO | NO | NO | Z,B. | Z. | B. | Z,B. | NO | B. | B. | B. | Z,B. | Z,B. | Z,B |
| PRIVATE DEED RESTRICTION | ✓ | NO | NO | ✓ | ✓ | NO | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| OTHER CONTROL | NO | CO | NO | NO | H.A. | CO. | H.A. | CO. | H.A. | H.A. | CO. | H.A. | CO. | H.A. |

Table 17.

and therefore can offer relatively cheap second-hand accommodation.

#### By Governmental Organizations

The second major group of planned communities comprises those which have been developed by government: the projects for industrial employees undertaken by various agencies, notably the United States Housing Corporation and the United States Shipping Board; the projects, not dependent exclusively on industry, of the Resettlement Administration: those of the Department of Agriculture of California; and capital cities such as Washington.

The purpose of the United States Housing Corporation and the United States Shipping Board was primarily to help win a war and only secondarily, to recover some of the cost of the projects by later sales and to provide developments, good of their kind, which would form permanent separate communities or parts of existing communities. In considering the efficiency and success of these projects, therefore, it should be remembered first, that some planning decisions may have been made not for the ultimate benefit of the community but for the immediate purposes of the Government. Also, the present state of these projects depends somewhat on the fact that the necessary "write-off" of cost when they were sold by the Government not only covered the extra cost due to the exigencies at the time of construction, but also the reduction necessary to effect sales in a bad market. That is, these commodities were, in effect, subsidized by the Government to such a degree that their sales price was far below any possible cost of construction by any agency, public or private. On the other hand, the pressure of the war produced, at least in some cases, a unification of design, a consistent overriding of little considerations by big considerations, which is very hard to obtain in ordinary times or by voluntary individual cooperation.

The "greenbelt" projects now being developed by the Resettlement Administration are different from the above communities in that, although they were designed to meet an immediate need, they were also thought of as attempts to establish case studies in a pattern of urban living. In this respect, they resemble the philanthropic experiments discussed below. The test of time as to their soundness and success is yet to come.

The developments of Delhi and Durham, Calif., represent vast sums spent on reclamation and irrigation of land by the State. The conclusions of the Division of Land Settlement, Department of Agriculture of California, are of extreme interest as they represent opinions based on these two developments which have a relation to any public endeavor of this nature. In its final report, dated June 30, 1931, Mr. Charles W. Cleary, chief of the division, states:

> It seems clear that the purpose involved in the inception of State land settlement was at least fourfold: (1) to prevent the exploitation of prospective colonists by private colonization agencies; (2) to more quickly colonize the available lands of the State with a select class of settlers and thus to materially aid newly organized irrigation projects as well as to add to the prosperity of the State as a whole; (3) to demonstrate the effectiveness and desirability of State-controlled, planned-in-advance settlements with trained experts to advise and direct the developments and operations of settlers; with best community cooperative practices insured and with the services of the State university easily and especially available as opposed to the customary hit-and-miss methods of private colonization agencies; (4) to demonstrate the importance of very long term loans at low interest rate, with small initial outlay, to the ultimate success of colonization.
>
> No question is raised as to the sincerity of purpose and honesty of action of any individual involved in advocacy or administration of State land settlement in California. It is conceded that could the theories of its leading advocates have been proven correct and satisfactory in practice an unusually important public purpose would have been served. After some 13 years of costly demonstration we are forced to conclude, however, that the theory of State-controlled land colonization will not work out well in practice. There seems sufficient basis for the conclusion that it was given a fair trial.
>
> It may be conceded at the outset that some rather serious engineering and administrative mistakes were made in the development and operation of State land settlement projects. It was to be expected that such mistakes would be made. The selection of location in the case of Delhi was extremely unfortunate. Too large a proportion of the settler's capital costs were deferred and even at a low rate of interest was enough to make ultimate success extremely difficult if not impossible. A considerable number of fine families came in who were unadapted to farming and farm life, and many started with insufficient financial resources; the requirements as to financial resources imposed by the board were found to be too low. An extreme depression which caused chaos and failure in agricultural activity generally naturally played a large part in and augmented failure of the State land settlements. There seems to be good reason to conclude, however, that had the engineering and administrative features been perfectly accomplished and had no serious depression developed or other factors contributing toward failure intervened the principle involved of Government paternalism, with its extreme tendency to destroy individual effort and initiative and in many instances to breakdown the very self-respect of the subject of its beneficience, would, in itself, have been sufficient to bring about ultimate failure of the venture as a whole.
>
> The Durham colony particularly has afforded a fair demonstration in attempted socialization of agricultural activity and the results have been anything but satisfactory. As a prerequisite to success individual effort and initiative seem to be indispensable. The land settlement venture has apparently well demonstrated that anything that offers a substitute for or that tends to weaken individual effort and initiative to that extent promotes failure in individual enterprise and dissatisfaction in community activity. The conclusion is unavoidable that few human beings are fashioned from sufficiently rugged fiber to withstand the weakening influences of paternalism; that few can resist the temptation to lean too heavily on a paternal Government where the opportunity offers. Strong personalities

were manifestly weakened by the years under State land settlement operation. Each colony presented a fair cross section of humanity as you would find it in most rural communities except that the method of selection, with the particular provisions that citizens only were eligible did produce a community of more than average high type but this was somewhat offset by the special appeal of easy terms and paternalism to the ne'er-do-well type. The percentage of that type accepted, however, was slight.

The value of healthy cooperation between individuals comprising a community, industry or commodity group is too well recognized to need defense or exposition in this report, but California's land settlement experience has clearly demonstrated that cooperation enforced by a centralized controlling power is not only ineffective for the purpose intended but may actually tend to defeat the purpose of its sponsors. Cooperation may safely be induced by an outside force or perhaps safely and effectively imposed upon a minority by a majority within groups provided that majority is sufficiently large but it cannot with satisfactory results be imposed by a nonparticipating force. On the contrary enforced cooperation tends to cause a reaction against a normal voluntary cooperation as in the Durham colony where at one time, at the apex of its history, the degree of cooperation between the individuals comprising the community was beyond parallel, at least in California activity. Then during the trough of the colony's experience, about 1927 to 1930, satisfactory cooperation for any purpose between the same individuals was a thing almost unknown. It now seems assured that with the communities of Durham and Delhi restored to a normal status a normal degree of voluntary cooperation will be established, and maintained along necessary lines through the activity of capable community leaders.

Many of the experiments now being carried on by the Suburban Resettlement Administration have, in essence, the same problems confronting them that were encountered in California. Penderlea, in many ways, will offer an excellent case study of this type of development, as it has passed through various stages of private and public control to practical completion at the present time. These rural developments have also felt the effect of deflated commodity prices over a longer period of time than have comparable urban industrial communities, and the farm-to-city trend of population, which at present is diminished but probably not arrested, has further affected any sound development.

The problems of the capital city, at least insofar as they differ from those of other cities, are properly the special concern of the State or Federal Government, as the case may be. The success in meeting these through advance planning, demonstrated by the unique example of Washington, is set forth elsewhere in this study.

#### By Real Estate Organizations

The residential community planned by a real estate development organization is essentially the product of a process of acquiring slightly improved land wholesale, developing it for a more intensive, primarily residential use, and selling it at retail. Very frequently there goes with this the process of building and selling houses. It may be noted that if the development is actually carried out, this is much more a process of manufacture than a process of land speculation. The value of the "raw land"—if it is really raw—is a very small part of the values ultimately sold.

The more usual of these salable values, some of which are not, except indirectly, physical things at all, may be listed as follows:

1. Space for a house and necessary access, for other uses of the ground if desirable, and essentially for light and air. The tendency, for profit, is to reduce this space to the salable minimum.

2. Proximity of the occupants to work, market, and recreation. This means proximity in time rather than in distance, but it is inseparable also from cost of transportation. Plainly, the heavier the human load on the land the greater amount of this proximity per acre there will be for sale.

3. Convenience. Here may be listed convenience of access to each dwelling, convenient relation of lots and houses to topography, and general fitness to the contemplated use.

4. Social desirability. This is more important in the more expensive developments, but it can seldom be neglected. The surrounding neighborhood may determine this. If it is not to do so, then the development must be large enough and self-contained enough to fix its own type. Incongruous types juxtaposed within the development itself may reduce it all to the level of the least desirable.

5. Amenity and beauty. This includes mutual unobnoxiousness—the avoidance of anything for the benefit of one property which disproportionately decreases the value of another property. It includes also pleasure in the appearance of the result. This may be the natural beauty of the site, preserved by the developer; but if the development is intensive, preservation of natural beauty is often impossible except in parks, and the beauty of residence areas must then be newly created from the composition of houses, other structures, lots, and streets, and their planting. It may be remarked that much beauty may be produced by the proper arrangement of these elements, without any extra expense for pure decoration. Further, it should be remembered that beauty is—up to a certain limit of cost in obtaining it—just as salable an asset as room or convenience.

From the real estate operator's point of view, all these values must be combined into a finished product which can be sold at a profit. Obviously, then, in each case he will adapt his product to the predictable market. He will seldom try experiments in reaching those of low income, where the margin of profit approaches zero. He will stress values which have the greatest "sales appeal" and which cannot be so advantageously offered by other developers. It will be unlikely that

the developer will spend much money in producing values which—however desirable for the community at large—are not immediately reflected in the price of what he sells. If the final product to be sold requires within itself full facilities for a large and complete community, then good business sense would dictate expenditure of money to meet all these community needs. But if, as has so often been the case, the developer sells the land only, so that later community inefficiency does not affect him financially, or sells small developments only, so that community facilities are the responsibility of others, then his activities may involve little consideration of any values not confined to the present time and the individual lot.

For the purposes of this discussion, therefore, we have considered only those real-estate developments which were large enough, financially strong enough, and have proved permanent enough, so that at least some comprehensive factors were incorporated in the plan, and then actually tested in construction and occupancy.

#### By Philanthropic Organizations

The residential community planned as a philanthropic contribution or a social experiment may reasonably be discussed with those just mentioned. Plainly, no philanthropist can house at his own expense any considerable part of the population of the United States. His projects are valuable, then, to anyone except the people housed, and perhaps the Government, only insofar as they are examples of what might be done by private enterprise, that is, what can be done at a reasonable profit. The difference between the philanthropic development and that primarily for profit is that the philanthropist is willing to take a larger risk in trying out a new theory and is willing to come closer to the known dead line of low earnings of the householders, below which they cannot afford any kind of new housing fitted to a socially desirable standard of living.

### Location of Planned Communities

#### By Industrial Organizations

Industrial factors, which naturally play a large part in the location selected for a new industrial site, ordinarily dictate the location of the resulting community. The following reasons for the selection of any particular site by industries were given in response to questionnaire and interview as the primary factor or factors governing this selection. Since several reasons were sometimes given for one community, the totals of the percentages of course exceed 100 percent.

| | *Percent* |
|---|---|
| General considerations affecting location of industrial towns: | |
| Existing industry | 32 |
| Presence of other cities or a metropolitan region | 27 |
| Needs of the proposed industry | 23 |
| Climatic considerations | 20 |
| Broad topographical considerations | 20 |
| Specific considerations: | |
| Rail transportation | 39 |
| Access to raw materials | 36 |
| Available water or hydroelectric power | 27 |
| Adequate labor supply available | 18 |
| Available industrial clear water | 16 |
| Nearness of a market or markets | 13 |
| Lower land costs | 13 |
| Utilization of byproducts | 9 |
| Facility of processing | 9 |
| Water transportation | 9 |
| Decentralization or freedom from congestion | 9 |
| Lower operating costs | 7 |
| Land previously owned by the industry | 4 |

Textile manufacturing communities constitute 20 percent of those covered by the above replies, while 25 percent are concerned with the extraction of coal, and the extraction and fabrication of iron, steel, aluminum, and copper. Eleven percent were planned either as agricultural communities or as rural industrial communities, while the remaining 44 percent are connected with the lumber industry, the production of textile machinery, railroad shops, shipbuilding, and diversified manufacturing. Of all the communities founded by industry which are studied in this report, including those from which no answer to our questionnaire was received, textiles represent 26.6 percent of the industries, and coal extraction and iron, steel, aluminum, and copper extraction and fabrication represent 34.4 percent. Table 18 indicates by type the number and geographical distribution of industrial communities which have been included.

The location of the greater percentage of these communities on or near either the Eastern Seaboard or the Pacific Coast follows closely the national distribution of population and indicates the influence of accessibility to metropolitan centers and to deep water and industrial and commercial activities. Few of these communities lie outside the sphere of influence of some larger urban area, and a number lie within the corporate limits of large metropolitan areas. In general, those that are isolated have been located with reference to industrial advantages in the form of raw materials and power or adequate rail facilities. Longview, Wash., Kingsport, Tenn., Vandergrift, Pa., and the Canadian pulp and paper towns, however, all have developed a strong urban character of their own, each exerting its influence on a surrounding region in accordance with its size and degree of isolation.

The location of the earlier communities represented largely by the New England mill town is the result of the utilization of water power. Manchester, N. H., Ludlow and Whitinsville, Mass., are examples of communities established on power sites, often started as grist mills or forge shops, which turned to textiles and machinery with the evolution of industry and even today are utilizing the available water for a portion of their power. In more recent times, a selection of location based on a wider range of factors has been made within the limits set by the nature of the industry, as already noted.

The location of any industrial town should be chosen, if possible, with consideration of the relative stability of the industry. While diversified industrial towns may contain many advantages in relative stability, yet

TABLE 18.—*Number and geographical distribution of industrial communities*

| | Textile manufacturing | Aluminum manufacturing | Coal mining | Steel manufacturing | Railroad shops | Copper mining | Power development | Sugar + celatex | Scales | Rubber | Chocolate | Textile machinery | Abrasives | Automobiles | Lumber | Diversified industry | Brick | Plumbing supplies | Chemicals | Pullman cars | Brass + copper manufacturing | Pulp and paper | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | | | 2 | 1 | | | | | | | | | | | 1 | | | | | | | | 4 |
| Arizona | | | | | | 1 | | | | | | | | | | | | | | | | | 1 |
| Arkansas | | | | | | | | | | | | | | | | | | | | | | | |
| California | | | | | | | | | | | | | | | | 1 | | | | | | | 1 |
| Colorado | | | 1 | | | | | | | | | | | | | | | | | | | | 1 |
| Connecticut | | | | | | | | | | | | | | | | | | | | | | | |
| Delaware | | | | | | | | | | | | | | | | | | | 1 | | | | 1 |
| Florida | | | | | | | | 1 | | | | | | | | | | | | | | | 4 |
| Georgia | 4 | | | | | | | | | | | | | | | | | | | | | | |
| Idaho | | | | | | | | | | | | | | | | | | | | | | | 3 |
| Illinois | | | 1 | | | | | | | | | | | | | | | 1 | | 1 | | | 1 |
| Indiana | | | | | | | | | | | | | | | | | | | | | | | |
| Iowa | | | | | | | | | | | | | | | | | | | | | | | |
| Kansas | | | | | | | | | | | | | | | | | | | | | | | |
| Kentucky | | | 1 | | | | | | | | | | | | | | | | | | | | 1 |
| Louisiana | | | | | | | | | | | | | | | | | | | | | | | |
| Maine | | | | | | | | | | | | | | | | | | | | | | | |
| Maryland | | | | 1 | | | | | | | | | | | | | | | | | | | 1 |
| Massachusetts | 2 | | | | 1 | | | | | | | 2 | 1 | | | | | | | | | | 6 |
| Michigan | | | 1 | | | | | | | | | | | 1 | | | | | | | | | 2 |
| Minnesota | | | | 1 | | | | | | | | | | | | | | | | | | | 1 |
| Mississippi | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | | | | | | | | | | | | | | | | | | | | | | | |
| Montana | | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska | | | | | | | | | | | | | | | | | | | | | | | |
| Nevada | | | | | | | 1 | | | | | | | | | | | | | | | | 1 |
| New Hampshire | | | | | | | | | | | | | | | | | | | | | | | |
| New Jersey | 1 | | | | | | | | | | | | | | | | | | | | | | 1 |
| New Mexico | | | | | | 1 | | | | | | | | | | | | | | | | | 1 |
| New York | | | | | | | | | | | | | | | | | | | | | 1 | | 1 |
| North Carolina | 2 | | | | | | | | | | | | | | | | | | | | | | 2 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | |
| Ohio | | | | 2 | | | | | | 2 | | | | | | | | | | | | | 4 |
| Oklahoma | | | | | | | | | | | | | | | | | | | | | | | |
| Oregon | | | | | | | | | | | | | | | | | | | | | | | |
| Pennsylvania | 2 | | 3 | 2 | | | | | | 1 | 1 | | | | | | 1 | | | | | | 10 |
| Rhode Island | 1 | | | | | | | | | | | | | | | | | | | | | | 1 |
| South Carolina | 4 | | | | | | | | | | | | | | | | | | | | | | 4 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | |
| Tennessee | 1 | 1 | | | 1 | | 1 | | | | | | | | | 1 | | | | | | | 5 |
| Texas | | | | | | | | | | | | | | | | | | | | | | | |
| Utah | | | | | | 1 | | | | | | | | | | | | | | | | | 1 |
| Vermont | | | | | | | | | | | | | | | | | | | | | | | |
| Virginia | | | 1 | | | | | | | | | | | | | | | | | | | | 1 |
| Washington | | | | | | | | | | | | | | | 1 | | | | | | | | 1 |
| West Virginia | | | | | | | | | | | | | | | | | | | | | | | |
| Wisconsin | | | | | | | | | 1 | | | | | 1 | | | | 1 | | | | | 3 |
| Wyoming | | | | | | | | | | | | | | | | | | | | | | | |
| Canada: | | | | | | | | | | | | | | | | | | | | | | | |
| Manitoba | | | | | | | | | | | | | | | | | | | | | | 1 | 1 |
| New Brunswick | 1 | | | | | | | | | | | | | | | | | | | | | | 1 |
| Ontario | | | | 2 | | | | | | | | | | | | | | | | | | 5 | 7 |
| Quebec | | 1 | | | | | | | | | | | | | 1 | | | | | | | 2 | 4 |
| Mexico | | | 1 | | | | | | | | | | | | | | | | | | | | 1 |
| Total | 18 | 2 | 11 | 9 | 2 | 3 | 2 | 1 | 1 | 3 | 1 | 2 | 1 | 2 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 8 | 77 |

there are certain desirable features of unified control to be found in the town with one industry. Diversity of industry sometimes has created confusion of policy.

It should be pointed out, however, that industry should offer a reasonable degree of security and stability within itself before the success of a community dependent on it can be fully tested. Inherent weaknesses exist in certain industries in this respect. The lumber industry has this weakness, as it is always moving away from a centralized point. Longview, Wash., as an experiment in centralizing the industry at one point, has hardly been successful, as the portable mill has been found to be a much more efficient method. Longview, however, is strategically located on navigable water and has adequate rail facilities, which have been factors favorable to centralization. The Kaul Lumber Co. in founding Kaulton took into consideration the question of instability in locating their lumber town. A letter from Mr. J. H. Eddy, manager of the company, may be quoted as follows:

* * * Our timber was located in a solid body, cornering in four counties, beginning some 15 to 18 miles south of the city of Tuscaloosa. No railroad or river touched the boundaries of the timber in a way that would be really helpful to us. A mill location in the timber would have been a long distance from any town of considerable size which could provide labor, supplies, educational facilities for our people, etc. These considerations led us to decide the mill should be placed near such a town, and Tuscaloosa was selected as the logical place, because of its transportation facilities, plentiful labor supply, presence of school and college, and so on. Tuscaloosa has three trunk line railroads, and in addition the Warrior River, a part of the Mississippi Valley system of water transportation.

The actual site of the plant, just outside the corporate limits of Tuscaloosa, was chosen for the usual and obvious reasons of fitting our needs very well in all respects.

We also believed that locating the plant near Tuscaloosa, and on the particular site selected, would lend something of permanency to the use of the site and the facilities, whether in a continuation of the lumber business, some related business, or something quite different.

This consideration was a factor in determining upon a "town-planned" community, as was our feeling that this would result in bringing to us higher types of sawmill labor, reducing turnover, better economic results for us in every way, as well as more happiness and contentment for those who worked with us. We have reason to believe that all of these objectives were attained.

The following are factors which may tend to stabilize the lumber industry and consequently increase the permanency of any community development connected with it:

1. The adoption of the severance tax, which would subject timber to taxation only when cut, and not place a tax upon the land. Under present methods, when the lumber market falls off, there is a tendency to offset the lower unit selling price and to raise cash for taxes by increasing volume production beyond the permanent economic limit.

2. Better methods of fire prevention and protection.

3. The practice of systematic cropping in order to produce a sustained yield. Three lumber concerns in Alabama have been operating on the sustained-yield principle with very successful results.

4. The establishment of pulp and paper and rayon mills, already taking place in the South and Northwest.

The stability of the textile industry is indicated, of course, by the number and permanency of the textile towns. The early advantages to the industry in its southern movement have to some extent disappeared. The "tax-grabbing" policies of the Northern States, together with unsatisfactory labor leadership, are causes to which this movement has been attributed. The obsolescence of machinery and the vertical plant arrangement in the New England plants are also said to have given a distinct advantage to the newer mills in the South, where the plants have an opportunity to spread horizontally, resulting in a higher relative efficiency with less skilled labor. Although cotton is the basic raw material for the textile mills of the South, its proximity has seldom been a determining factor in the choice of location. The native labor of the South has offered certain advantages, also, since it is highly individualistic and tends to resist outside organization by dealing directly with the plant in labor differences.

It may be observed that some of the branches of the industry have brought unfavorable labor conditions upon themselves by importing low-grade foreign labor. The conditions which exist in Ludlow, Mass., where about 70 percent of the population is of foreign origin, are an example of this influence upon a town which was once considered a model industrial community.

Communities such as Chicopee and Silvertown, Ga., represent the best of the textile towns studied and, with others, indicate the tendency to locate near a small existing city. Mr. Matthews, general manager of the Goodrich plant at Silvertown, considers 3 miles from a parent or central town of 2,000 to 5,000 population which provides a market center as the ideal location for an industrial town.

Mining and steel towns depend more than any other type upon the location of raw materials. Barring outside factors, they are as permanent as their product. Fairfield, Ala., and Morgan Park, Duluth, Minn., represent the best efforts in communities for this industry. Gary, Ind., which may be considered as a planned town, served its best purpose in this respect by providing a complete example of what not to do in future developments. Fairfield, Ala., represents a theoretically ideal location surrounded by all the necessary raw materials for steel manufacture, while

Gary is a central point at which the raw materials are assembled from east and west.

Towns for other industries which have been established or attempted are scattered. Clewiston, Fla., represents an attempt to adapt a portion of the Everglade country to sugarcane, with sugar and Celotex as the end products. The difficulties with drainage in this country are well known, and the effort to escape the sugarcane diseases found in Louisiana has not been entirely successful. Textile-machinery plants have adopted the policy of keeping close to the textile plants, as represented by Hopedale and Whitinsville, Mass. Alcoa is an interesting example of town location. While this aluminum industry was located in Tennessee for the cheap hydroelectric power available, the precise location of the town and plant rested primarily upon available building sites and the proximity of an existing trading center, which placed the town some 13 miles from its source of power.

While the existence and location of the separate town planned and developed by industry rest largely upon the policy and tradition of the industry, its permanency and stability, and the nature and location of its basic raw materials, the industrial suburb as planned by various industries is largely the result of housing shortages in an existing city, caused either by rapid growth within the existing industry itself or, in some instances studied herein, by the lag in house building since the World War. In general, the problem of industrial-suburb location has been a local one, with the factors of the location of the industry already settled. Goodyear Heights and Firestone Park at Akron, Ohio, Eclipse Park at Beloit, Wis., and Indian Hill at Worcester, Mass., are examples of well-planned communities of this type. As in the industrial town, proximity to the plant has been a governing factor in location.

**By Governmental Agencies**

The communities planned and developed by governmental agencies fall in general into three classes: (1) power and reclamation development; (2) war emer-

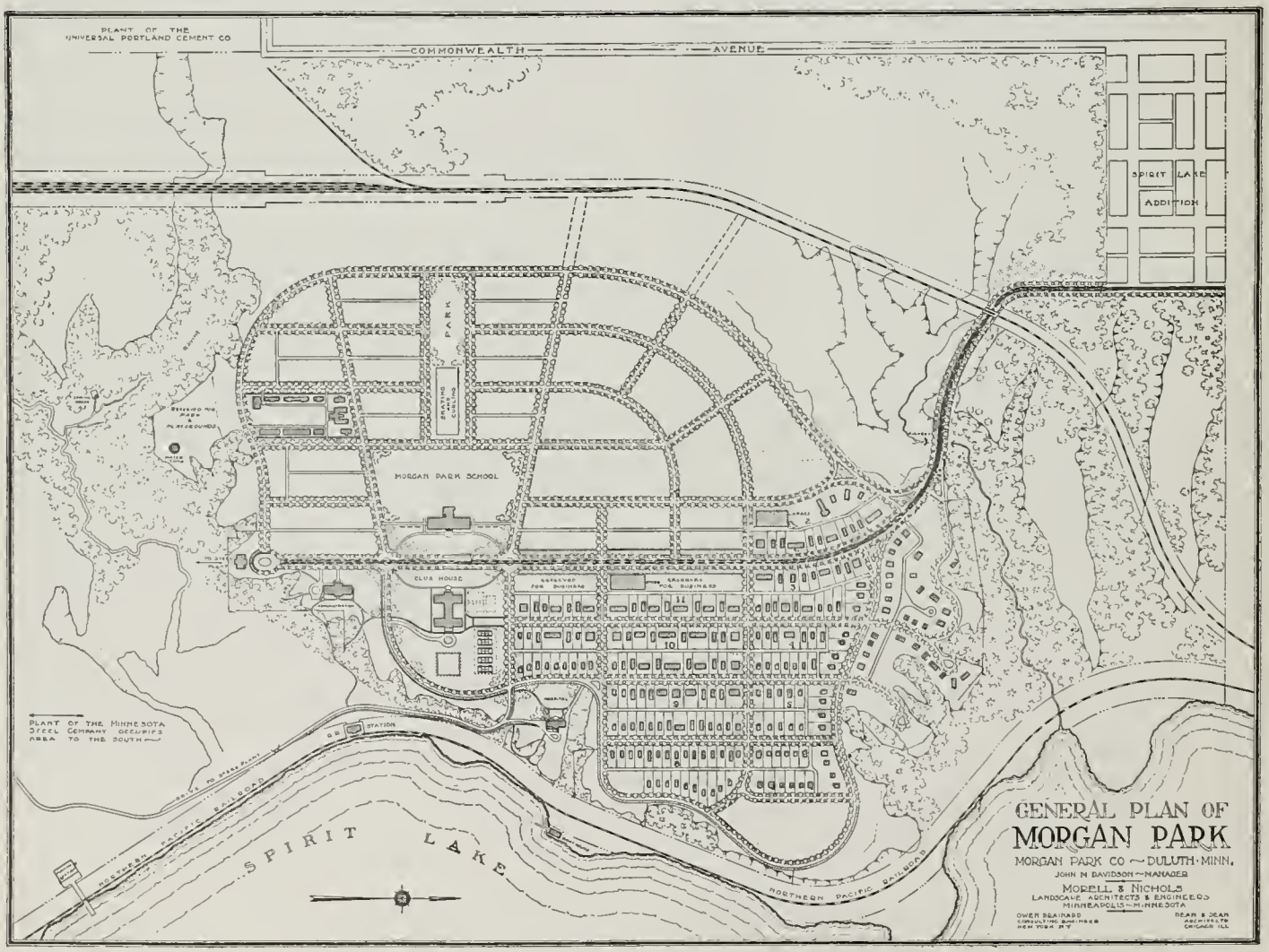



FIGURE 33.—As planned and partially developed.

gency; and (3) redistribution of population. As in industry the community locations were largely determined by the activity for which they were established. The permanent war housing developments had two considerations in mind after a shortage of housing in any one vicinity had been determined: first, to provide homes for war workers in shipyards and munition plants on adequate sites, favorably located with reference to the industries they were to serve, with regard for local conditions, limitations, and war-time emergency; second, to take into consideration the adaptability of the development after the war to permanent community use in company or in individual ownership. The measure of their success in both directions is manifested by their functioning during the war (with which we are here only indirectly concerned), by the influence which they have had in promoting better subsequent development, and by their present status, as indicated by the field survey, in which last point we are especially interested.

#### By Real Estate Agencies

In general, there is little geographical significance other than proximity to prospective buyers in the location of communities developed by real-estate interests. Of 35 urban communities studied, 12 are suburban areas, selected on the basis of size and character, provision of community facilities, and special interest. With the exception of the Florida and California boom towns, which will be discussed later, the remainder are located within large metropolitan regions and depend almost entirely upon these regions for their existence.

These two types of residential community raise the interesting question of the relative merits of the residential satellite and the suburb. In answer to this question, Mr. J. C. Nichols, of the Country Club District, Kansas City, Mo., says, "Our experience has been more in favor of a graduated ordinary development. I feel the satellite town-site development is only practical in connection with the assurance of the establishment of large institutions giving ample employment * * *. Also, the expense of protecting scattered suburbs of satellite areas to control property is an enormous undertaking. The heaviest load a development such as (The Country Club District) has to carry is the control of ample land to give protection." It should also be noted that this load has been one of the chief difficulties at Radburn.

There are few examples where the planned residential community without nearby industry has as yet been entirely successful. Garden City, Long Island, did not develop until Doubleday-Page supplied an industry. Mariemont, Ohio, anticipated industrial development which located elsewhere, leaving the town in a relatively unfavorable location for commuting. Riverside, Ill., Shaker Heights, Ohio, and Coral Gables, Fla., although incorporated as independent towns, are essentially suburbs of large metropolitan areas. Radburn is as yet without industries. Although its difficulties are largely the result of the depression, the final realization of the plan will probably depend considerably upon this industrial factor.

The Florida boom resulted in the birth of a number of new towns, many of which were well planned and a few of which have materialized. Most of them are interesting in their conception but were planned purely for speculative profits. The inevitable result indicates the need for basing large-scale urban development on something in addition to climate and recreation. Since relatively few persons in the United States can afford a winter home in Florida without actively supporting it financially by earnings either in some other part of the country or in Florida, the number of families planned for as residents, without local means of livelihood, is remarkably large. Over 200,000 acres were contemplated in the proposed developments for urban and rural use studied for this report. Moreover, this represents only a small percentage of the total acreage in Florida at that time speculatively planned for residence. Clewiston is perhaps the most interesting attempt to combine the climatic attractions with business and industrial enterprise, but it is plainly evident that business and industry rather than the climate have been the controlling factor in such limited development of the town as has actually occurred to date. The developers of Venice attempted to provide some degree of industry, but it was essentially a scheme to rebuild the depleted finances of the Brotherhood of Locomotive Engineers at a time when the boom was on the way out, and the efforts made to colonize the land were ineffectual. Coral Gables has been said by some to be based primarily on the expected agricultural development of the Everglades and by others to be based primarily upon its attractions as a winter resort and suburb of Miami.

It is obvious that towns and cities which have been established for many years and have built up large vested interests and high values cannot be scrapped deliberately in favor of new sites, no matter how theoretically desirable such a new site may be or how inefficient the present location and arrangement. These established areas must continue to depend upon replanning. However, the occasion for relocating small towns has occurred and is worthy of mention as an indication of what may be done in the future to improve the lot of the small, poorly located community. Columbus, Ky., Osborn, Ohio, and American Falls, Idaho, are representative examples of communities which for economic reasons have been moved to new

sites. Periodic inundations and the development of reservoir sites for power, irrigation, and flood control were the causes which prompted the relocation of these towns. The floods which covered eastern portions of the United States in the spring of 1936 bring sharply to our attention the inability of man-made devices to cope completely with natural phenomena and the relatively poor location of some of our urban areas where natural factors have not been recognized. Opportunities exist here to study the relative costs resulting from inundations or other natural causes, compared with the costs of providing for a well-planned community on a new site which would be freer not only from the natural disadvantages of the old site but from man-made disadvantages as well. Relocation of a town subject to flood, if its cost is compared with the costs of flood prevention or periodic inundations or other major disadvantages, may be as logical and economical as it is in the case of water supply and power sites.

A number of attempts have been made in various sections of the United States to establish rural communities based on an agricultural economy. Unfortunately, they have been the least successful type of planned community that has been attempted. Their failures may be attributed to several basic factors, discussed elsewhere in this study. A number of these developments have been based primarily on speculation rather than sound agriculture.

#### Summary

It may be said, in conclusion of the above discussion of the locational factors which have affected the establishment and subsequent development of planned communities, that—

1. Industrial communities on the whole have provided the soundest and most stable type of development as they have first provided a means of livelihood, have in general been based on sound economics, and have received more thorough analysis of purpose, location, and function.

2. The war housing developments studied have, in general, succeeded not only in serving their primary purpose during a time of emergency, but in remaining as sound communities in the years that have followed.

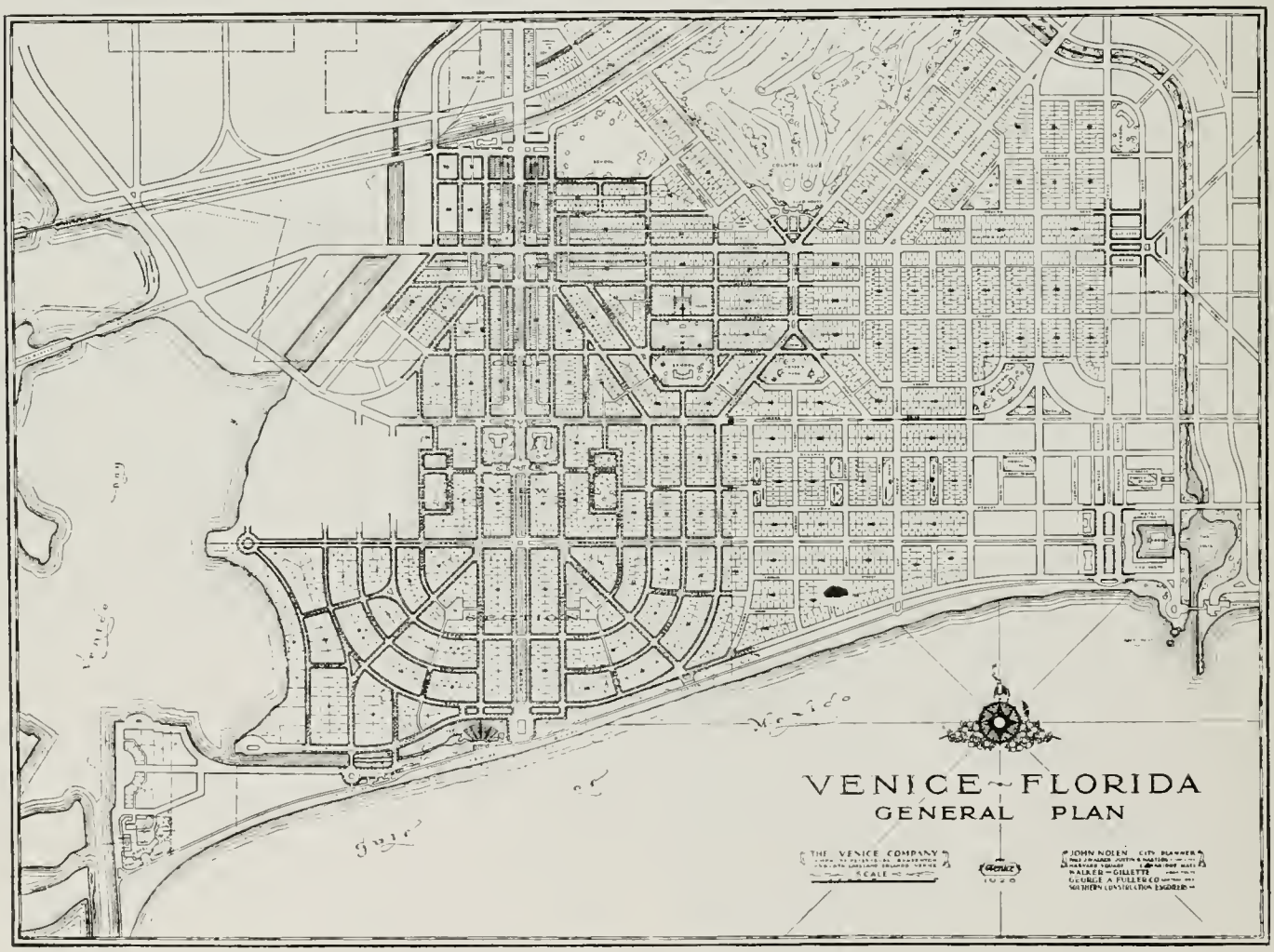



FIGURE 34.—As planned.

3. Residential satellite communities, unless located with reference to nearby established or coincidentally planned industry, commerce, and business, or unless intended for high-income groups which may draw their financial support from a distance, will fail to provide a sound investment either for the developer or for the subsequent resident. As these high-income groups are limited in numbers, communities of the type of Radburn, N. J., and Mariemont, Ohio, which as yet have not attracted much industry, and certainly any further schemes of the nature of the Florida boom towns, may expect similar limitations.

4. State paternalism, insufficient care in selection of prospective settlers, the element of rural land speculation, poor location, and the rural-to-urban trend have so far tended to defeat any sound establishment of the rural colony. If, however, a trend continues and spreads which is found to exist at present in certain sections, such as Silvertown and Alcoa, where voluntary removal to acreage farms is taking place, similar projects undertaken by private and public agencies may develop a desirable type of community living.

### Physical Arrangement and Convenience of the Plan

#### Regional Location and Access

It has already been noted that, in the majority of cases, the communities included in the study are within the sphere of influence of some community of equal or larger size. The new town plan has thus been affected to a greater or less degree by existing or already proposed highways or by transit and transportation routes which have become the major means of access and egress for the new town. It is not always true, however, that this influence varies with the size of the parent city or with the distance from it. Fairfield, Ala., although adjoining Greater Birmingham, is isolated from it, with no through traffic routes. Hopedale, Mass., although off of any so-called main highway route, is so located both in the State and between nearby highways as to be in the path of a short-cut route between New York, Rhode Island, and Connecticut on the south, and northern New England and the shore on the north. The traffic which has found this short-cut route has created an unexpected problem. During holidays as high as 1,200 cars per hour pass through the town, 10 percent of which carry New York plates and 30 percent Rhode Island plates. Brooklawn has the misfortune to be bisected by both a main highway and a railroad. Forest Hills is suffering from through streets in the interior of the development which have become objectionable since the advent of the automobile. In Kingsport, the unfortunate relationship of the Bristol Highway and Sullivan Street, which is the through traffic artery of the city, to the business and residential areas, has of course, been intensified by the growth of the city to over twice the anticipated population. This through traffic has been a factor in causing the intrusion of business into the residential district while area planned for business is still lying idle. Had the revised plan, prepared in 1916, been fully carried out, it is believed that this difficulty would have been avoided.

Norris, Tenn., at the present time is in a state of transition. With the dam completed, the major activity of the town is gone. This period of change was foreseen and planned for by the Tennessee Valley Authority. An attempt was made to stimulate the local arts and crafts of the people by establishing training schools in the town in order that a self-supporting local population group might be encouraged. Also, an effort is being made to encourage the use of Norris as a satellite of Knoxville. A freeway was planned and is now largely constructed, to decrease, in part, the disadvantages of commuting over some twenty miles of partly mountainous area to Knoxville. A major disadvantage exists, however, in the consideration of Norris as a commuting satellite of Knoxville. The Knoxville metropolitan district, consisting of 135,714 persons in 1930, is hardly large enough to create a pressure for satellite areas at this distance. The ability to overcome this disadvantage rests largely in the provision of the freeway and the charm and attractiveness of the town and surrounding scenic and recreational features.

The best examples of effective relation to through traffic are to be found in Chicopee, Cradock, and Hilton, where the development has been located on one side of heavily traveled highways. The ability to exclude through traffic, however, is not only a matter of location on, or to one side of, a main traffic route, but is a function of size as well. None of the developments mentioned above are of a size to create heavy through traffic within themselves. The opportunity exists, however, in developments of any size, to create a pattern made up of a series of Hiltons and Chicopees, each an entity in itself but served directly by through highway facilities which have no opportunity to enter into the unit.

The provision for rail transportation, although of first importance in the location of industrial communities for shipping purposes, has not been a primary factor in the movement of population. Forest Hills Gardens alone depends largely on rail commuting facilities and represents the typical relationship of the suburban residential area to a large metropolitan region. Radburn, within the same metropolitan region, is served rather ineffectively by rail and depends largely upon bus and private motor car. The street railway facilities at Fairfield, Ala., would be inadequate in any

town containing a high percentage of commuters. Kingsport is at the present time reaching a size where some form of transit is needed within the city. Access from one part to another is either by foot, private auto, or taxi. The anticipated use of the railroad as a city entrance has never materialized and the connections with outside points are by bus. The almost exclusive use of bus and private automobile in nearly all communities makes the determination of highway location an extremely important factor, not only as to access to and from these developments, but as to the disposition of the development itself.

*Disposition of the Industrial District.*—It is natural that the access between home and factory should be a primary consideration in the arrangement of nearly all of the industrial communities. This factor is especially evident in Alcoa, Tenn., Silvertown, Ga., and Hopedale, Mass., where the industrial area has been centrally located and encircled by residential neighborhoods within short direct walking distance of the plants. Topographic considerations have worked to modify this arrangement in most cases, however. Longview, Wash., is essentially the reverse of the above-mentioned towns, since it has a belt of industrial area on deep water contiguous to and partially encircling the residential and business area. The original townsite of Torrance, Calif., is almost entirely surrounded by an industrial district. The Kingsport industrial area was determined by the available level land and permissible railroad grades, as was Vandergrift, Pa., where industry is located at the borders of the town. The only objectionable feature in the otherwise very successfully planned town of Chicopee, Ga., is the separation of the plant, and at the present time the school, from the residential area by the heavily traveled highway. In a number of instances, the existing railroad rights-of-way and water-and-land contour have dictated an arrangement which places the town at one side, and distinct from the industrial area. Examples of this arrangement are found in Morgan Park, Minn., Kistler, Pa., Fairfield and Kaulton, Ala., Kapuskasing, Ontario, and Temiskaming, Quebec. Suburban examples, represented by Firestone Park and Goodyear Heights in Akron, represent essentially the same type of arrangement.

The location of industrial areas in residential communities developed by real estate interests has been a secondary consideration if considered at all. The area reserved for industry at Radburn is directly connected with the main thoroughfare of the ultimate plan, and is visually separated from the town by a ridge. It represents another element in the comprehensive plan of the community which has been studied in detail. The industrial area at Mariemont lies at the foot of the bluffs adjacent to the railroad right-of-way and the river. These towns may be considered potential industrial communities and are hardly representative of the residential satellite dependent almost entirely on industrial, commercial, and business activities which are not near nor related to it except through transit and highway accessibility.

The war developments, while classified as industrial communities according to their primary purpose, fall largely either into the group of industrial residential communities located on a site distinct from the industrial area, or into the residential group. This is the inevitable result of the dual considerations of wartime emergency and post-war use. They represent in many ways a desirable relationship between residence and industry, as they are conveniently located without being dominated by contiguous industrial development. They do, however, have the disadvantage of being dependent upon some form of transportation other than walking.

Yorkship Village and Hilton are war towns which are still largely serving the plant for which they were established. Cradock also still houses a large percentage of navy-yard workers, while, on the other hand, Brooklawn, Atlantic Heights, and Union Park Gardens have become the homes of a diversified group of wage earners.

*Disposition of the Business District.*—The provision and disposition of stores and shopping facilities vary widely with the different developments. A central business district is perhaps the obvious arrangement, but is not necessarily a successful one. Yorkship Village is provided with a central square around which are grouped all of the local shops needed for its size, considering its location in the Camden region. Yet a considerable percentage of trading is lost to the square in favor of the business development which has taken place on the Mount Ephraim Pike. The reason for this preference is hard to determine, but may be attributed in part to the monopoly which tends to exert itself in too limited an area, the absence of amusements, filling stations, and beer gardens, which are present on the Mount Ephraim Pike, and the type of population inhabiting Yorkship. While attracting the bulk of the trading, this central square development has created some objectionable features which will be discussed later.

The string development of business in Fairfield along one street is objectionable from all points of view, as already indicated in the individual discussion. The disposition of stores at the entrance of the principal street at Hilton and in the interior of the development at Cradock is worthy of comparison. Both developments are similarly disposed in relation to main highways and entrance street. The arrangement at Hilton seems preferable for several reasons. First, business is removed from the interior to the main high-

way, to the mutual advantage of both business and residential areas. Second, less frontage of residence on the highway and more in the interior of the development results, and third, more persons living within the development pass through the business area to and from their work. Business groups in Alcoa, Tenn., are scattered, while a business area at Silvertown, Ga., is central to the three small residential neighborhoods which make up the town but lies on the periphery of each. Each unit, however, has its own neighborhood grocery store. Forest Hills Gardens has, in many respects, one of the most functional business areas from the point of view of location in relation to streets, traffic, and transit, whatever its weaknesses in size and detail according to present-day needs.

*Disposition of Open Spaces.*—In the relationship of recreational areas to residential districts, Alcoa is unique in its linear park arrangement enclosing what are essentially small residential neighborhoods. The central park at Fairfield, Ala., is effectively used by the residential areas on all sides for passive as well as active recreation. It has a tendency to exert a social pull which has aided in creating a worth-while community spirit. Radburn's linear park system forms essentially the base upon which the residential groups are superimposed.

*Summary.*—There is an interesting relationship to be observed in the disposition of industrial, business, and recreational areas in relation to the residential areas they serve.

1. Industry may take in varying degrees one of three forms in relation to residential area:

(*a*) The central industrial area—Alcoa.
(*b*) The circumferential industrial area—Torrance and Longview.
(*c*) The detached industrial area—Morgan Park.

2. Business may take in varying degrees one of five forms:

(*a*) The central business area—Yorkship Village and Cradock.
(*b*) The lineal business area—Fairfield.
(*c*) The business area on the periphery, usually at the main entrance—Hilton.
(*d*) The central business area touching several surrounding residential units—Silvertown.
(*e*) The scattered localized business area—Alcoa.

3. Park and recreational areas may be disposed in:

(*a*) Central compact areas—Fairfield.
(*b*) Lineal marginal areas—Alcoa, Longview.
(*c*) Scattered local areas—Clewiston as planned.
(*d*) Lineal interior systems—Radburn.

**Street Pattern**

The street pattern of a community, if it really reflects the community needs, is the result of the interaction of two forces, (1) traffic tension and (2) block and lot development.

Since those facilities which are sought by most of the people are for convenience usually located in the middle of the town, there tend to arise a number of radial streets connecting this center with the outlying area. Since, however, in a town of any considerable size it causes congestion to lead into and through the center of the town any traffic which does not desire primarily to go there, there are likely to arise some circumferential streets at a greater or less distance from the center. All this part of the street net is likely to be of greater width and to carry not only the local traffic of the town but the traffic between the town and other towns, including whatever traffic goes through the town to a destination on the farther side.

Moreover, it is necessary to get from any part of the town to any other part and to be able to do so directly without going through the center, partly for shortness of route and partly for avoidance of the congestion above mentioned. There thus arise a considerable additional number of more or less circumferential streets, in which the service for through traffic is considerable, but the service for access to lots is also important.

Then, there is the obvious necessity for access to every lot, which produces the final network of minor access streets, the location of which is based more on the land development than on directness of traffic.

KISTLER INDUSTRIAL VILLAGE, PA.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | TOTAL LOTS - 220 |
| RESIDENTIAL | 23.02 | 38.6+ | LOTS/ACRE INC./ST.- 3.1 |
| BUSINESS | 1.2 | 2.0+ | AVE. LOT AREA - .11 ACRES |
| TOTALS | 24.22 | 40.7 | NORMAL SIZE - 40'x100' |
| SEMI-PUBLIC AREAS | | | |
| CHURCHES | 1.93 | 3.3+ | |
| COMMUNITY HALL | 1.47 | 2.4+ | |
| TOTALS | 3.42 | 5.7+ | |
| PUBLIC AREAS | | | |
| SCHOOL | 1.47 | 2.4+ | |
| PLAYFIELD | 3.93 | 6.6+ | |
| PARKS | 8.87 | 14.9+ | |
| TOTALS | 14.27 | 23.9+ | |
| STREETS | | | |
| MAIN | 8.73 | 14.6+ | |
| LOCAL | 8.85 | 14.8+ | |
| TOTALS | 17.58 | 29.5 | |
| GRAND TOTAL | 59.49 | 100.0 | |

DATA FROM OFFICE OF JOHN NOLEN

Table 19.

These various necessities, differing in their relative importance in different towns, produce different street patterns which, in their typical forms, can be represented diagrammatically. There are the radial pattern and the radial-circumferential or spider-web pattern, in both of which traffic needs are dominant; and there is the gridiron pattern, in which block development is dominant. Of course, these two patterns may exist together, the major streets making the first pattern and the minor streets the second, as, for instance, in the city of Washington. The rectangular arrangement of streets in the gridiron pattern is due primarily to the greater convenience for building and, as a minor matter, for layout of the small rectangular lot and, therefore, of the ordinary rectangular block.

These patterns, however, seldom occur in reality in their diagrammatic form, or when they do, it is usually a proof that other considerations have been neglected. The adaptation of the streets to the topography for cheapness of construction, cheapness of land development, and reduction of gradient may, and in many cases should, cause such wide departure from any diagrammatic arrangement that no simple street pattern is recognizable in the plan.

As to appearance, there is a unity to be obtained by a system of straight lines and a judicious arrangement of sites for structures at dominant points terminating vistas. On the other hand, the curvilinear or even naturalistic arrangement of streets may obtain another kind of unity no less effective: namely a unity between the streets and houses, on the one hand, and the topography, on the other, and perhaps also a unity of smooth sequential curvature in the street.

Plainly, the size of the blocks occupying the spaces in the street net will be determined as to their width by a dimension which is twice the desired lot depth. They will be determined as to their length by the reasonable amount of indirectness which can be forced upon the local traffic for the purpose of diminishing, as far as may be, the expense of cross streets not directly needed for access to the lots. Obviously, here again, the dimensions and shapes may be greatly influenced by the existing topography.

Where topography has not been a controlling factor, highly formalized arrangements have been utilized, as in Yorkship Village and Hilton. This procedure has been carried to an ineffective extreme in Brooklawn.

In the treatment of rolling or rugged topography, several methods are evident in the disposition of streets. In Alcoa, Tenn., the disposition of streets in some form of comprehensive pattern was made subservient entirely to the local conditions of subsurface and surface drainage. The resultant street system is economical, but not visually organized. At Vandergrift, Pa., the topography, which is as varied as that of Alcoa, was fully recognized. In addition, the visual organization of the street pattern was considered, with a result which is just as functional and economical in addition to having the advantages of visual unity.

There has been a general tendency throughout these communities to apply the gridiron street pattern wherever the topography has permitted. In Alcoa, the gridiron system has been adapted to the topography by aligning the major and secondary streets with ground depressions, throwing the local street grid at right angles to the contours, a sound engineering arrangement but not conducive to any organized pattern if adopted to the exclusion of other factors. Chickasaw, Ala., is an interesting adaptation of a gridiron system on a level site fitted in with the radial streets which form major collectors, giving direct access to the shipyards. The plan of Chicopee, Ga., approaches closely the diagrammatic ideal of the "one industry" mill village, and is made up entirely of a series of radials and circumferentials which give an even distribution of access to all parts of the community. Yorkship Village and Brooklawn represent two communities on level topography where the gridiron has been entirely avoided. Yorkship is made up essentially of radial and circumferential streets with well-related local access streets. An equally formalized street arrangement was attempted in Brooklawn without the recognition of a functional pattern or of physical and visual obstacles.

An important recent development in street-pattern design has been the use of the so-called superblock. In this scheme, the secondary streets providing circulation within the community are so spaced as to produce very large blocks. As applied at Radburn, short culs-de-sac give local vehicular access to the dwellings within the blocks. The secondary streets or "motor roads" may follow a gridiron, curvilinear, or radial pattern. At Radburn, several additional features of the superblock system, though not essential to its basic idea, are designed to increase its advantages as to safety, privacy, and general avoidance of the nuisance ordinarily accompanying automobile traffic. There, dwellings do not front on the motor roads, but a system of interior parks and walks provides a park and pedestrian entrance on the opposite side of each dwelling from the paved cul-de-sac lane which provides motor access. A modification of the superblock idea used at Greenbelt practically eliminates the culs-de-sac, which are replaced by garage compounds. Various results of these innovations are discussed elsewhere under their appropriate headings.

The major consideration in the utilization of pattern in street design is, as has been said, not only to satisfy

the existing or anticipated demands of directional movement from one point to another but also to serve directly the use to which the areas between the lines of movement are to be put. It is obvious that the traffic demands of residence upon a local street are far less than those put upon a street of the same length devoted to business uses which serve many residences, or than those put upon a thoroughfare which acts as a collector for traffic from many residences to some point of destination and back again.

The principle of the differentiation of street widths in relation to use has been recognized almost without exception in planned communities. The major, secondary, and minor streets which have been used in these developments are only comparable as to their minimum width and then only as to that portion which is devoted to the use of vehicles, that is to say the roadway. The minimum width of a roadway is not only a function of the car width, and to some extent of the speed, but also of the volume of movement and, especially in business districts, of the volume of parking.

For minor streets, an 18-foot roadway has been considered by many planners as a minimum. Under certain conditions, this width has been found insufficient. In Hopedale, Mass., for instance, the provision of garage groups accommodating from 10 to 20 cars has brought out the disadvantages of the 18-foot roadway. No garage entrance or other provision for off-street parking has been made near the houses, and the tendency to park the car in the street in front of the house during the day and evening, which makes movement on these streets difficult, is thus encouraged in preference to parking at the garage. At Brooklawn and Cradock, curbing was not originally provided, with the result that park strips have become in part parking areas. Definite objection was expressed to the 18-foot roadway by the town officials in both communities. Curbing is now being installed at Brooklawn and the roadway widened to 20 feet. At Hilton, the desire for a 24-foot minimum roadway was expressed. It should be remarked that in none of these cases has the pressure of traffic volume yet been seriously felt. When traffic pressure has become serious, opposite conclusions may be reached as at Forest Hills and Radburn. Both of these communities are fully aware of the pressure which automobile traffic can exert. In Forest Hills, the narrow and curved local roadways are highly valued as a physical means of slowing down traffic. In response to the question regarding the disadvantages of parked cars on local streets, the observation was made that the more parked cars and the more curved streets there were, the more safety there would be to pedestrians and children, and the regret was expressed that more of the local streets were not of this nature. At Radburn, the 18-foot cul-de-sac is free from parked cars as well as from through traffic, due to the disposition of the individual garage driveways, which automatically remove the car from the roadway. This arrangement is highly satisfactory to the residents.

Thus far, we have considered only the local street and roadway. An extreme example of inadequate provisions in a major roadway is that of Broad Street in Kingsport. A 100-foot street width was provided, with two 24-foot roadways and a 20-foot center planting strip. Diagonal parking has been allowed in order to take care of the heavy demand for parking space on the business street, leaving a single traveled lane, which is entirely blocked whenever a car comes into or out of the parking space. Widening of the roadways toward the curb is undesirable, as the 10-foot sidewalks are needed, and the abolition of the planting strip is undesirable at least esthetically, since it contains a fine planting of elms. Pressure to remove the central strip has so far been resisted by the improvement company. The present difficulty is largely the result of the fact that the city is now over twice the size originally planned for.[1] The excellent arrangement for off-street parking at the business and apartment groups at Radburn represents a desirable method of handling this sort of parking problem.

The widths assigned to major, secondary, and local streets have been somewhat arbitrary, though usually depending upon thoughtful estimates of local conditions, the expected volume of traffic, and the disposition of the related uses which the streets serve. The widths which have been used in the communities studied are as follows:

*Major streets*

Street widths, range: 50–200 feet; average, 102 feet.
Roadway widths, single roadway, range: 22–64 feet; average, 40 feet; double roadways, range: 18–28 feet each; average 22.4 feet.

*Secondary streets*

Street widths, range: 40–140 feet; average, 68.5 feet.
Roadway widths, range: 22–60 feet; average, 29.2 feet.

*Minor streets*

Street widths, range: 30–70 feet; average, 48.4 feet.
Roadway widths, range: 18–40 feet; average, 22.6 feet.

To provide or not to provide alleys or service lanes is a matter which depends on the type and arrangement of housing, the character of the development, and the local traditions and preferences. Alleys have been provided in both business and residence districts in 39 percent of the cases where information was obtained. Eighteen percent of the communities provided for alleys in the business area only, while 41 percent

[1] Both center strip and planting strip have been removed since this report was written.

made no provision for alleys. In only one case were alleys provided in the residential district only. It is interesting to observe the desire for alleys or the objection to them, depending on various considerations. In Forest Hills Gardens, few alleys are provided, and those which exist present a problem in upkeep, as their right-of-way is an easement on the abutting property to be kept up by the abutter, and difficulty is encountered in obtaining proper upkeep. However, a realization of the need for alleys throughout the community was expressed because of the disadvantages otherwise resulting from daily refuse collection. The absence of alleys at Hilton, on the other hand, is there considered one of the best features of the plan. At Westfield, Ala., a Negro company town, collection of refuse and waste from can privies takes place three times a week. Here, the alley forms the only road access to the houses, the street being omitted in favor of a community open space. The alleys at Mariemont, Ohio, were in the best condition of any observed. They are paved with brick and have the appearance of minor streets rather than service lanes. The arrangement of alleys located immediately at the rear of the houses without the interposition of a sizable rear yard was found at Morgan Park, Minn., and Whitinsville, Mass. This system requires double provision of alleys within the block but allows the interior of the block to be used as communal open space or allotment gardens. At Radburn, the cul-de-sac is essentially the service lane and has a certain similarity to Westfield in this respect, although not comparable in character. Hopedale and Chicopee have group garages with no alley provisions. The type of development used in Greenbelt has gone a step beyond the Radburn plan in that no direct roadway access has been given to the group housing.

Alley widths range from 10 to 20 feet in residential districts, with 15.7 feet as an average, and from 12 to 25 feet in business districts, with 16.5 feet as an average. It should be noted that, except for mere access to the rear of the lot, a 10- or even a 12-foot alley is insufficient. This is plainly evident at Yorkship Village, where garages have been crowded on the rear lot lines and on alleys never designed for them, and at Brooklawn, where varied alley widths of 10 and 18 feet have been used together. Alley widths in communities primarily planned by realty developers have been held around 20 feet for both residence and business.

The amount of street and alley requirements is not only a matter of traffic volume, parking provisions, and local preferences, but depends also on the type, arrangement, and frequency of the house units upon the land. An interesting comparison may be made by studying the relation of the density of house units per net acre to the percentage of planned area dedicated to streets, the planned area in this case comprising that part of the development allotted to residential and business use, including public and semipublic open spaces surrounded by, within, or directly contiguous to such development, and street area serving this use of land.

The communities shown in table 20, with the exception of Greenbelt, Radburn, and Chatham Village, follow the usual method of subdivision. While it is, of course, impossible to make any absolute comparisons among this group because of the number of incomparable factors,

TABLE 20.—*Relation of density of house units to area dedicated to streets*

| | Average housing units per net acre | Prevailing type of housing | Alleys | Percent of planned area in streets | Type of street system |
|---|---|---|---|---|---|
| NORMAL BLOCK PATTERN | | | | | |
| Chicopee, Ga | 5.1 | Single-family detached | No | 18 | Radial and circumferential. |
| Kingsport, Tenn | 5.5 | do | Business and residence | 21 | Radial, circumferential, and gridiron. |
| Morgan Park, Minn | 9± | Single-family detached, semi detached, and group | do | 22 | Modified gridiron. |
| Kohler, Wis | 6.6 | Single-family detached | Business | 23 | Do. |
| Cradock, Va | 8.8 | do | do | 23 | Do. |
| Hilton, Va | 9± | do | No | 24 | Gridiron. |
| Union Park Gardens, Del | 16 | Group | No | 25 | Curvilinear. |
| Vandergrift, Pa | 14.5 | Single-family detached | Business and residence | 27 | Do. |
| Kistler, Pa | 9 | Single-family detached and semidetached | No | 29 | Do. |
| Noreg, N. J | 13 | do | Business and residence | 30 | Formal. |
| Fairfield, Ala | 6.7 | Single-family detached | do | 32 | Curvilinear and gridiron. |
| Kapuskasing, Canada | 6 | do | Business | 33 | Do. |
| Yorkship Village, N. J | 30 | Group | Business and residence | 33 | Formal, radial, and circumferential. |
| SUPERBLOCK PATTERN | | | | | |
| Greenbelt, Md | 7 | do | No | 10 | Curvilinear. |
| Radburn, N. J | 10 | Single-family detached and semidetached | No | 21 | Do. |
| Chatham Village, Pa | 12 | Group | No | 21 | Do. |

including topography and other local conditions, it is worth noting that, in general, the percentage in streets increases with the density of housing per net acre. This tendency is modified at Morgan Park by a high percentage of group and two-family detached houses; at Kistler by duplication of street facilities because of rough topography; at Fairfield by the amount of parkway; and at Kapuskasing by the minimum specification of a 66-foot street. In Greenbelt and Chatham Village, on both of which group houses and group garages have been exclusively used on a superblock pattern, there is a similarity in the ratios between the number of houses per acre and the percentage of street area.

*Blocks and Lots.*—The above discussion has applied primarily to streets but has inevitably included some reference to the size, shape, and disposition of blocks and lots. In many respects, the lot unit is a primary consideration after the major street pattern is disposed of, for it reflects the type of development and the normal house coverage of each type in its relation to the remaining yard space about it, as well as the length of street and underground utilities needed per family unit.

In communities planned for industry, single-family detached-house lot sizes vary from 3,000 square feet with a 30-foot frontage at Vandergrift, Pa., to 15,000 square feet with a varied frontage at Norris, Tenn., with an average for all communities studied of 6.206 square feet. The condition which has resulted from the use of the 3,000-square-foot lot at Vandergrift has already been described. Semidetached lot sizes in communities where data were available range from 2,450 square feet to 7,500 square feet, with an average of 3,845 square feet. Row or group house lots, excluding lots for the end houses of each group, range from 1,260 to 4,500 square feet, with an average of 2,308 square feet. In general, frontages for interior-group house lots range from 16 feet to 25 feet, while end lots approximate the frontage used in the semidetached lots. Multifamily lots, chiefly for two-family houses, detached, semidetached, and grouped, range from 1,600 square feet to 2,750 square feet and average 2,181 square feet.

In communities planned by real-estate agencies, lot sizes are somewhat higher, as might be expected, since the incomes of their clientele average higher. Detached-house lots range from 4,300 square feet at Radburn to 20,000 square feet at Columbus, Ky. There are 5- and 10-acre estates in the Kansas City Country Club District. Excluding the latter, an average lot size is about 8,790 square feet. Few semidetached lots are found, the average being 5,433 square feet, while lots for group housing average about 2,000 square feet. Multifamily lot sizes, including apartments, have little significance, and depend on disposition of house units rather than upon the size of the units themselves.

It is noteworthy that, throughout the communities studied, the density of population upon land has been relatively low, as shown on the accompanying tables, with the exception of Yorkship Village, which alone exceeds the maximum density of 12 families per acre of gross area set up as a standard by the British garden city movement. In communities planned for industry, these densities range from about 3 families per net acre at Norris to 16 at Union Park Gardens and 30 at Yorkship, with an average, excluding Yorkship, of 8.1. In communities planned for residential purposes, this ratio is very much lower.

It is evident that the smaller the lot sizes become, the greater is the tendency to fix upon the ground some form of rectangular grid pattern. This is not inevitable, however, as the smallest detached lot found was that at Vandergrift, where the street pattern assumes a sweeping curvilinear form. At Radburn, the grid has been modified into a cul-de-sac. In general, however, small lots tend to produce a certain regularity in the normal pattern of lots arranged in double tiers. It is where such an arrangement as that attempted at Brooklawn is employed that the economy of lot shape and arrangement is lost through the irregularity in the shape of blocks.

It should be noted that, in general, the average size of lot in all of the communities studied is ample to provide not only reasonably adequate front and rear

LOVELAND FARMS, YOUNGSTOWN, OHIO.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | RESIDENTIAL LOTS – 868 |
| RESIDENTIAL | 161.78 | 67.0 | AVE. LOT AREA – 1.88 ACRES |
| BUSINESS | 14.81 | 6.0 | NORMAL SIZE – 50' x 150' |
| TOTAL | 176.59 | 73.0 | HOUSES PER NET ACRE – 5.37 |
| | | | HOUSES PER GROSS ACRE – 3.58 |
| SEMI-PUBLIC AREAS | | | |
| CHURCHES | .71 | .3 | |
| TOTAL | .71 | .3 | |
| PUBLIC AREAS | | | |
| SCHOOLS | 2.8 | 1.0 | |
| PARKS | 8.29 | 3.6 | |
| FIRE STATION | .68 | .3 | |
| TOTAL | 11.77 | 4.9 | |
| STREETS | | | STREET LENGTH – |
| MAIN – 60'-70'-80' | 16.43 | 6.8 | MAIN STREETS – 2. MILES |
| LOCAL – 30-40-50 | 36.50 | 15.0 | LOCAL " 67 " |
| TOTAL | 52.93 | 21.8 | |
| GRAND TOTALS | 242.00 | 100.0 | |

DATA FROM THE OFFICE OF JOHN NOLEN

Table 21.

yards, but side yards as well. The commodious side yards found in the company towns were provided as much to secure low insurance rates as to give light and air, especially as the majority of the housing is of one-story type. Furthermore, the raw-land cost in these communities has not caused a pressure for heavy densities, and the element of land speculation has been notably absent. It is of relatively little importance what the primary reason is, so long as the essential requirements of health and welfare are observed. These requirements have been more than met in the company towns studied.

*Orientation.*—However theoretically desirable the precise orientation of lots and houses may be, except where extremes of temperature exist, it seems evident that in such open developments as these the practical considerations of grades, drainage, and access will exert a major influence over the house orientation where the two considerations conflict. Since the very practical requirement of adequate light and air is met by the creation of ample front, rear, and side yards, and the arrangement of the interior rooms, and proper window openings of the house unit, many different orientations are possible.

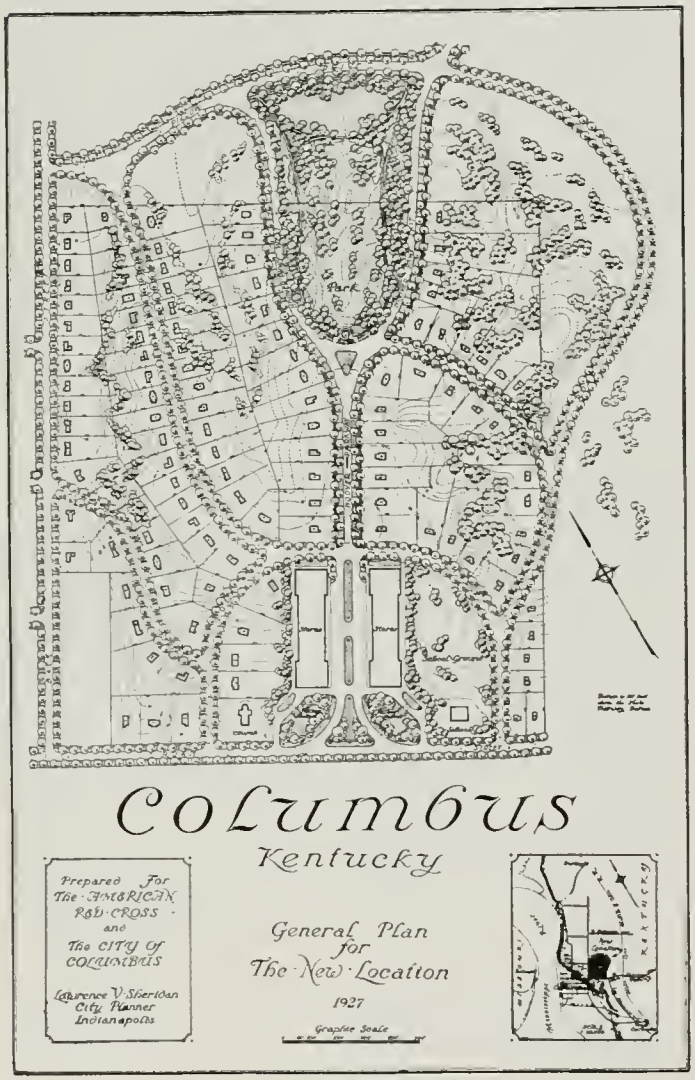



FIGURE 35.—As planned.

**Housing**

Some of the site-planning considerations in the housing in planned communities have been discussed as they relate to size and arrangement of lots and blocks. The housing types in these communities are predominantly single-family detached dwellings. The ranges and averages in ratios of housing types in the cases where such data were available are shown in table 22.

TABLE 22.—*Ranges and averages of housing types*

| | Range | Average |
|---|---|---|
| COMMUNITIES PLANNED FOR INDUSTRIAL PURPOSES | | |
| | *Percent* | *Percent* |
| Detached single-family | 0–100 | 68 |
| Semidetached single-family | 0– 75 | 14 |
| Row or group single-family | 0– 73.5 | 14 |
| Families in multifamily dwellings | 0– 53 | 4 |
| COMMUNITIES PLANNED FOR RESIDENTIAL PURPOSES | | |
| Detached single-family | 0–100 | 77 |
| Semidetached single-family | 0– 30 | 4 |
| Row or group single-family | 0– 98 | 16 |
| Families in multifamily dwellings | 0– 14 | 3 |

The high percentage of row houses in the residential group is affected considerably by the percentages existing at Mariemont and Chatham Village, which are hardly representative. The percentage of multifamily dwellings in the industrial group represents largely two-family (detached, semidetached, and in rows), while the percentage in the residential group is affected by the high percentage of apartment units at Radburn and Mariemont. It should be noted that, since the number of cases in the table is small, the inclusion or exclusion of only a few nontypical communities might considerably affect the averages shown here.

*Rental and Ownership.*—One of the most interesting features in the discussion of housing is the ratio between rental and ownership by the occupant, which directly affects the character of the community. No definite correlation between housing types and ownership can be made because any such relation that might exist is obscured by other factors in the company towns included in this survey, where ownership of individual homes varies according to the policy of the company, the age of the community, and the amount of transition which has taken place from company control to self-government. The factor of transition is found to a lesser extent in communities developed by real-estate interests. Even in the war-housing de-

velopments, as noted in Brooklawn, this transition period has not yet been entirely passed. The changes which have taken place in various communities during this transition period are exceedingly interesting, however.

Cradock and Hilton, since their sale by the Government, have become communities of home owners to the extent of 75 percent and 80 percent, respectively, of the total number of dwelling units. In Hilton, this percent of occupant ownership is being raised through sale of dwellings by the land company until its interest shall be entirely liquidated. The present status of Brooklawn with respect to home ownership is indicated by the low figure of 33 percent, which is gradually increasing at the present time. Yorkship Village represents a different situation. There, a distinct increase in the number of home owners and an improvement of the character of population occurred after it was sold by the Government. A percentage of approximately 60 percent of home owners was reached in the early part of the last decade. With the period of prosperity from 1925 to 1929, this percentage fell to about its present level of 40 percent. This decrease has been attributed primarily to the small size of the houses, as those former owners who moved went almost entirely to larger houses in other parts of Camden, although not necessarily to better residential sections. An interesting reverse movement has been noted since the depression, but this is now again tending to reverse itself. One family is known to have moved back and forth seven times, depending upon its financial status. Thus, the character as well as the appearance of Yorkship seems destined to fluctuate. It would appear that if a family in that region can afford only a small house, then they are best served, all things considered, at Yorkship Village, but if they need and can afford a larger house, then the other advantages of Yorkship are often not enough to hold them. Atlantic Heights has become more or less stable as a high-rental community for much the same reasons as Yorkship, but without many of Yorkship's advantages, and has only 25 to 30 percent home ownership at the present time. It is believed that little significance can be attached here to the fact that both communities consist largely of group housing. Union Park Gardens, which is composed almost entirely of semidetached and group housing, is 60 percent home owned, with, however, an average of 1,100 square feet of usable floor space per home in comparison with about 500 square feet in Yorkship Village.

The average percentage of home ownership by occupant in the communities planned for industry, where data are available, is 40 percent and in those planned by real estate agencies 76 percent.

The effect that rental and ownership have had in maintaining the status of these communities is quite apparent and appears in several forms. Chicopee and Chatham Village, although composed entirely of a tenant population, are perhaps the outstanding examples of excellent and consistent maintenance of houses and yards. This is primarily the result of the similar central control and policy of two essentially different types of agency, combined with the relative ease and economy of large-scale maintenance. This should be contrasted with Atlantic Heights, which is essentially in the same relative income group as Chicopee and Radburn, which houses an income group comparable to Chatham Village. Atlantic Heights is largely owned by individual absentee landlords, and what maintenance exists is consistently poor, except for home-owned dwellings. In Radburn, while the maintenance of property and parks by the City Housing Corporation and the Radburn Association is consistently good, maintenance of houses and yards in individual ownership varies greatly with the apparent interest and inclination of the owners. In Forest Hills Gardens, on the other hand, excellent maintenance is given to parks and privately owned homes by the

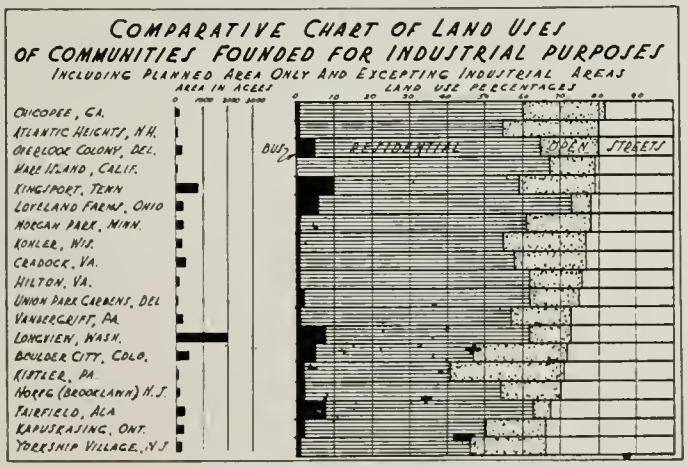



FIGURE 36

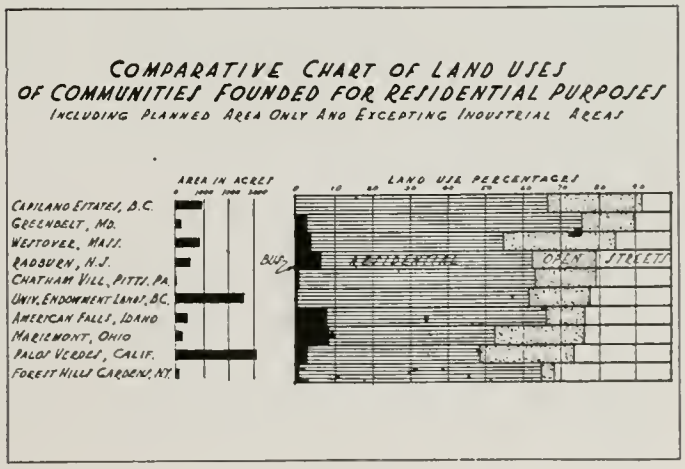



FIGURE 37

Gardens Association and owners alike, while row housing along Burns Avenue, largely in rental, is much inferior in this respect. Yorkship Village presents much the same aspect of maintenance as Atlantic Heights. However, Yorkship, with income groups and house values comparable to those in Hilton and Cradock, is much less well-kept, although perhaps some small part of the difference is due to a difference in real wages and population characteristics as affected by geographical location.

## EXISTING HOUSING CONDITIONS IN PLANNED COMMUNITIES

SYMBOLS
✓ - FACTOR NOT QUANTITATIVELY MEASURED
W - WHITE
C - COLORED
• - FROM 1930 U.S. CENSUS
MASONRY EXTERIOR INCLUDES STUCCO AND BRICK VENEER

| | FOUNDING AGENCY | INCOME GROUPS LOW | INCOME GROUPS MED. | INCOME GROUPS HIGH | AVE. SIZE OF FAMILY | AVE. ROOMS PER HOME | % BASEMENTS | % FURNACE | % COMMUNITY WATER SUP. | % COMMUNITY SEWERAGE | % ELECTRICITY | USABLE FLOOR AREA | % WOOD EXTERIOR | % MASONRY EXTERIOR | HOUSE TYPES % DETACHED | % SEMI-DETACHED | % ROW OR GROUP | % MULTI-FAMILY | % OCCUPANT OWNED HOMES | VALUE OF OCCUPANT OWNED HOMES | RENTALS PER MONTH | ASSESSED VALUATION REAL PROPERTY PER FAMILY | ASSESSED VALUATION REAL PROPERTY PER CAPITA | AVE. LOCAL TAX RATE PER $100 LAST THREE YEARS | % FAIR MARKET VALUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **FOUNDED FOR INDUSTRIAL PURPOSES** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALCOA, TENN. | IND. | ✓ | ✓ | 0 | 3.9 | 4-5 | 0 | 10 | 100 | 100 | 100 | 600 1100 | 99 | 1 | 100 | 0 | 0 | 0 | 6 | 800 2500 | 600 2700 | 2820 | 725 | 1.70 | |
| CHICOPEE, GA. | IND. | 600 | 800 | 1150 | 4+ | 4-5 | 0 | 3 | ✓ | ✓ | UNDER GR. | 500± | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 2800 3500 | 10.00 12.60 | | | | |
| CRADOCK, VA. | GOV. | 1000 1% | 1800 15% | 2100 84% | 5 | 6 | 0 | 0 | 100 | 100 | 100 | 800 | 80 | 20 | 90 | 5 | 4+ | 1- | 75 | 3250 | 22.50 | 2200 | 440 | 2.00 | 100 |
| ERWIN, TENN. | IND. | 12-1500 10% | 15-1800 80% | 18-3000+ 10% | 5 | 4-7 | ✓ | ✓ | PRI-VATE | ✓ | ✓ | | 50 | 50 | 100 | 0 | 0 | 0 | 25 | 2000 5000 | 20.00 30.00 | | | | |
| FAIRFIELD, ALA. | IND. | 12-1500 35% | 2400 40% | 4000 25% | 4+ | 6 | 40 | 40 | 100 | 80 | W-100 C-95 | 800 | 100 | 0 | 96 | 1 | 0 | 3 | 43 | W-3500 C-1500 | W-28.00 C-11.00 | 1200 | 365 | 1.80 | 60 |
| FIRESTONE PK., AKRON, OHIO | IND. | | 15-3000 95% | 3-5000 5% | 4 | 6 | 100 | ✓ | AKR. ✓ | AKR. ✓ | ✓ | | 95 | 5 | 99 | 1 | 0 | 0 | 98 | 4000 6000 | 25.00 50.00 | 5040 | 1252 | 2.46 | 60 |
| GOODYEAR HTS., AKRON, OHIO | IND. | 2% | 85% | 13% | | 6 | 100 | 100 | 100 | 100 | 100 | 750 | 50 | 50 | 99 | 1 | 0 | 0 | 66 | 5000 | 30.00 | 4245 | 1056 | 2.46 | 60 |
| HERSHEY, PA. | IND. | 900 12% | 1250 81% | 3250 7% | 3.5 | 6 | 100 | 100 | 100 | 50 | 100 | 1140 | 60 | 40 | 90 | 9+ | 0 | 1- | 80 | 5000 | 8.00 45.00 | 2800 | 800 | 2.20 | 52 |
| HILTON, VA. | GOV | 800 25% | 1000 38% | 2000 37% | 5 | 6 | 6 | 6 | 100 | 100 | 100 | 820 | ✓ | ✓ | 40 | 44 | 16 | 0 | 80 | 3100 | 32.00 | 1800 | 360 | 2.25 | 50 |
| INDIAN HILL, MASS. | IND. | 1100 | 1600 | | 3-4 | 5-6 | 100 | ✓ | ✓ | ✓ | ✓ | | 100 | 0 | 99 | 1 | 0 | 0 | 96 | 3200 | 22.00 40.00 | | | 3.36 | 100 |
| JANESVILLE, WIS. | IND. | | 1-2500 100% | | 4 | 4-6 | 100 | ✓ | ✓ | ✓ | ✓ | | 100 | 0 | 100 | 0 | 0 | 0 | 67 | 2900 7000 | 15.00 40.00 | | | | |
| KAPUSKASING, ONT. | IND. | 1055 30% | 1642 56% | 1800+ 14% | 4 | 4-6 | ✓ | 50 | ✓ | ✓ | ✓ | 500 1400 | 100 | 0 | 80 | 11 | 5 | 4 | 80 | | | | | | |
| KAULTON, ALA. | IND. | | | | 5 | W-3-5 C-2-4 | 0 | 0 | | 0 | W-80 | 350 1250 | 100 | 0 | 100 | 0 | 0 | 0 | 7 | 800 1250 | W-10.00 C-6.75 | | | | |
| KINGSPORT, TENN. | IND. | 700 10% | 850 60% | 1250 30% | 4+ | 5 | 15 | 20 | 100 | 75 | 100 | 400 700 | 75 | 25 | 94 | 4 | 2 | 0 | 60 | 2500 | 15.00 40.00 | | | 2.10 | |
| KISTLER, PA. | IND. | | | | 5+ | 4-8 | ✓ | ✓ | ✓ | ✓ | ✓ | | 100 | 0 | ✓ | ✓ | | | 0 | | 10.00 13.50 | | | | |
| KOHLER, WIS. | IND. | 800 62% | 1240 31% | 2% | 4 | 6-8 | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | 98 | 2 | 0 | 0 | 99 | 5000 12000 | | 6200 | 1460 | 1.50 | 97 |
| LONGVIEW, WASH. | IND. | | | | 3.1 | | | | ✓ | ✓ | ✓ | | | | •97 | | | •3 | 41 | 3000 | 25.00 | | | | |
| MORGAN PARK, MINN. | IND. | | | | 4 | 5 | 94 | 10 | ✓ | ✓ | UNDER GR. | | 0 | 100 | 26 | 9 | 12 | 53 | 0 | 4000 | 10.00 35.00 | 1330 | 332 | 1.03 | 33 |
| NOREG VIL., (BROOKLAWN) N.J. | GOV | 1200 86% | 2500 10% | 3600 4% | 4 | 5-6 | 100 | 100 | 100 | 100 | 100 | 850 | ✓ | ✓ | | | | | 33 | 3000 | 25.00 | 1600 | 400 | 4.72 | 60 |
| SILVERTOWN, GA. | IND. | 520 4% | 865 94% | 2% | 4.3 | 4 | 0 | 0 | ✓ | ✓ | ✓ | 1000 | 96 | 4 | 87 | 12 | 0 | 1 | 0 | 3000 | 745 | | | | |
| TEMISKAMING, QUE. | IND. | 900 72% | 12-1300 24% | 1300+ 4% | 6 | 4-7 | ✓ | 75 | ✓ | ✓ | ✓ | 300 600 | 40 | 60 | 0 | 48 | 50 | 2 | 0 | 1500 6000 | 10.00 30.00 | | | | |
| TORRANCE, CAL. | IND. | 6-900 25% | 9-1200 70% | 24-4000 5% | 4.5 | 4-6 | ✓ | A FEW | ✓ | ✓ | ✓ | 600 1500 | 10 | 90 | 90 | 1 | 1 | 8 | 60 | 2500 4000 | 25.00 40.00 | | | 83 | |
| UNION PARK GARDENS, WIL., DEL | GOV. | 1000 10% | 2000 80% | 2500 10% | 5 | 6 | 100 | 100 | WIL. 100 | WIL. 100 | 100 | 1100 | 0 | 100 | 1- | 25 | 73+ | 1- | 65 | 4000 | | 3200 | 640 | 1.64 | 80 |
| VANDERGRIFT, PA. | IND. | 1000 20% | 1500 30% | 2500 30% | 3.8 | 6 | 100 | 85 | 100 | 100 | 100 | 540 | 100 | 0 | •93 | | | •7 | 60 | 4000 | 29.00 | | | | |
| YORKSHIP VIL., CAMDEN, N.J. | GOV. | 1000 24% | 1250 75% | 2500+ 1% | 4 | 5 | 100 | 100 | CAM 100 | 100 | 100 | 500± | ✓ | ✓ | 4 | 21 | 71 | 4 | 40 | 2800 | 26.00 | 3800 | 950 | 4.30 | 100 |
| **FOUNDED FOR RESIDENTIAL PURPOSES** | | | | | | | | | | | | | | | | | | | | | | | | | |
| AMERICAN FALLS, IDAHO | GOV. | 1-500 50% | 5-1500 40% | 1.5-4000 10% | 4.5 | 3-6 | ✓ | 30 | ✓ | ✓ | ✓ | 500 1200 | 80 | 20 | 98 | 0 | 0 | 2 | 60 | 1000 5000 | 10.00 25.00 | | | | |
| CHATHAM VIL., PITTS., PA. | PHIL. | | ✓ | | 3+ | 5-8 | ✓ | ✓ | PITTS ✓ | PITTS ✓ | ✓ | | 0 | 100 | 0 | 2 | 98 | 0 | 0 | | 47.50 87.00 | | | | |
| COUNTRY CLUB DIS., K.C., KAN. | REAL | | 3600 10000 | | 4 | 5-8 | ✓ | ✓ | K.C. ✓ | K.C. ✓ | ✓ | | 60 | 40 | 99 | 0 | 0 | 1 | 85 | 6000 300000 | 50.00 250.00 | | | 3.50 | 40 |
| FOREST HILLS GARDENS, N.Y. | PHIL. | 3000 1% | 3-6000 75% | 6000+ 24% | 4+ | 8-9 | ✓ | ✓ | N.Y. ✓ | N.Y. ✓ | ✓ | | 0 | 100 | 75 | 5 | 19 | 1 | 75 | 35000 40,000 | 150.00 200.00 | 16555 | 3678 | 2.79 | 100 |
| MARIEMONT, OHIO | PHIL. | 1-1200 5% | 12-2000 70% | 2-5000 25% | 4 | 4-7 | ✓ | CEN. INDIV. | CIN. ✓ | ✓ | ✓ | 460 1000 | 0 | ✓ | 42 | 0 | 37 | 21 | 20 | 6000 30,000 | 27.00 125.00 | | | | |
| RADBURN, N.J. | PHIL. | 18-2400 20% | 24-5000 65% | 10000+ 15% | 3.4 | 6-8 | ✓ | ✓ | ✓ | ✓ | ✓ | 800 1200 | ✓ | ✓ | 32 | 30 | 5 | 33 | 65 | 7900 18,200 | 14-20.00 PER RM | 3300 | 970 | 4.45 | 30 |
| RANCHO SANTA FE, CAL. | REAL | | | | 4 | 5-20 | 0 | ELEC. HEAT | INDIV | INDIV | ✓ | | | ✓ | 96 | 0 | 0 | 4 | 90 | 6000 50000 | 75.00 150.00 | 15800 | 4000 | 3.46 | 30 |
| ROLAND PARK, BALTIMORE, MD. | REAL | 3-5000 25% | 5-10000 50% | 10000 25% | 4 | 8-10 | ✓ | ✓ | BALT. ✓ | BALT. ✓ | ✓ | 1400 2000 | OLD 23 NEW 25 | OLD 75 NEW 75 | 90 | 5 | 5 | 0 | 90 | 20000 | 75.00 225.00 | | | | |

Table 23.

The above observations confirm the natural assumption that the type of housing and the size of houses and yard have a direct bearing on desirability for home ownership. It is also suggested, quite apart from consideration of human desires and social significance, that good maintenance of property housing a population in the low-income brackets varies directly with the factors of home ownership and central control.

*Exterior Construction and Upkeep.*—The type of exterior house construction also has much to do with the appearance and quality of maintenance in these communities. In the communities occupied by the low-income groups, whether the homes are owned or rented, the value of brick and stucco with slate or good composition shingles is very obvious. As an example, the appearance of Yorkship Village as it is, might be compared in imagination with what it would be if the buildings were of the commonplace type of row house to be found in this region. Nevertheless, this good appearance might have been obtained in a more economical way. The avoidance of wooden details on housing for low-wage groups appears to be strongly advisable when the sagging and rotting conditions of many of the stoops at Yorkship are considered. One reason why the delicately designed wood cornices and porticos are still white instead of the prevailing yellow or brown is probably because few have been repainted as yet. Fortunately, much of the original character of the war housing communities has been preserved by the use of some form of stucco or masonry exterior which is reasonably permanent. The notable exceptions of Cradock and Hilton may again be mentioned, where frame dwellings, largely in individual ownership, have retained their color harmony (some would say monotony) throughout the community to a remarkable degree over a period of years. Morgan Park represents a good example of the use of concrete masonry walls, while the use of brick veneer at Chicopee has created a highly desirable appearance, although further encouragement to the termite is said to have been offered by enclosing the wood members with a continuous foundation curtain wall. Incidentally, this pest has caused considerable damage in several of the communities visited in the South. Careful defense against it by copper flashing is installed in Norris.

*Income Groups.*—As the communities included in this study have been largely designed and built with some specific range of income groups in mind, this discussion would be incomplete without reference to their present status in this respect. A representative sample of existing conditions in communities planned both for industrial and real estate development purposes is given in table 24, in order of average income. These figures are based upon data derived from questionnaires and field interviews.

TABLE 24.—*Representative sample of range of income groups*

| Community | Average yearly income per wage earner | Average value of owned homes | Average monthly rental for rented homes |
|---|---|---|---|
| American Falls, Idaho | $825 | $3,000 | $17.50 |
| Chicopee, Ga | 832 | 3,150 | 11.30 |
| Kingsport, Tenn | 955 | 2,500 | 27.50 |
| Temiskaming, Quebec | 1,000 | 3,750 | 37.50 |
| Silvertown, Ga | 1,030 | 3,000 | 7.45 |
| Terrance, Calif | 1,082 | 3,250 | 32.50 |
| Yorkship Village, N. J | 1,202 | 2,800 | 26.00 |
| Hilton, Va | 1,320 | 3,100 | 32.00 |
| Hershey, Pa | 1,410 | 5,000 | 26.50 |
| Brooklawn, N. J | 1,426 | 3,000 | 25.00 |
| Erwin, Tenn | 1,695 | 3,500 | 25.00 |
| Janesville, Wis. (Overlook Heights) | 1,750 | 4,950 | 27.50 |
| Vandergrift, Pa | 1,900 | 4,000 | 29.00 |
| Union Park Gardens, Del | 1,950 | 4,000 | 40.00 |
| Cradock, Va | 2,044 | 3,250 | 22.50 |
| Mariemont, Ohio | 2,050 | 12,000 | 60.00 |
| Firestone Park, Akron, Ohio | 2,237 | 5,000 | 37.50 |
| Fairfield, Ala. (white) | 2,430 | 3,500 | 28.00 |
| Radburn, N. J | 3,950 | 10,000 | 100.00 |
| Forest Hills Gardens, N. Y | 5,325 | 37,500 | 175.00 |
| Roland Park, Baltimore, Md | 7,250 | 20,000 | 150.00 |
| Average for the sample | 2,079 | 6,678 | 44.65 |

It is to be noted that in some cases the house cost in relation to the earnings of an employee is so low that the provision of the housing obviously embodies a form of subsidy to labor. In other cases, however, the house cost in relation to the earnings of an employee is so high that the house could be afforded economically only on the basis of two employees per house.

*Observations of Developers.*—Based on the varied experiences with housing types in different parts of the country by industries and developers and public officials, the following conclusions by them are worth noting. At Atlantic Heights, N. H., the small single and double tenements are much in demand for rental to a low-income group, in preference to row or group housing. In the Country Club District, single-family houses have been used exclusively, with 85-percent ownership, but apartments are being provided and are becoming increasingly popular. The need for yard space ventilation because of climatic considerations in Texas, where people live 9 months of the year out-of-doors, has made the single-family house most successful at Greenway Parks.

The desire for privacy is given as a major item in the demand for single-family housing at Indian Hill, Mass. According to the Modern Housing Corporation, the five-room bungalow, because of its lower selling price and its adequacy for small families, has been popular at Janesville, Wis., which includes Overlook Heights. At Radburn, home ownership as an expression of individualism influenced the selection

of the detached single-family housing, with semi-detached and group housing providing lower rents and maintenance costs. There was a distinct preference for the detached single-family house at Torrance, Calif., because of the desire for lawns and shrubbery. It was pointed out at Hilton and at Cradock, Va., that the preference for detached houses had been carried to the point of converting dwellings for this less intensive use. The general consensus was that anything less than a five- to six-room detached single-family house was less desired for ownership; four- to five-room houses, whether detached, semi-detached, or row, being in demand only for rental. These conclusions are in no way peculiar to planned communities but should be noted here as their significance has not always been considered in their relation to future policy.

*Deterioration and Obsolescence.*—For two reasons, the factors of lowered values, i. e., deterioration and obsolescence, have had little influence on the planned communities studied, in comparison with communities in general. First, their average age is much less than that generally found elsewhere. Second, when built, their standards were usually well in advance of those of the ordinary type of contemporary development. The first reason applies primarily to deterioration, that is, the outrunning of physical maintenance and repair by the aging of the physical structure so that it becomes progressively less valuable for its original use. The second reason applies as well to obsolescence.

The few cases found of actual deterioration were largely the result of neglect. The condition of the Brooklawn houses discussed in section 2 had not affected the structural quality of the buildings. At Yorkship Village, deterioration has been confined largely to exposed wood members, which require careful maintenance. In the South, the termite was particularly noted at Atco, Ga., where structural members were being replaced by termite-proofed construction. Elsewhere, few cases were found where deterioration had outrun physical maintenance, except in such cases as Kingsport, Tenn., where definitely lower types of housing had been provided than that originally planned. The same observation applies to streets and utilities. In Cradock, Va., the bituminous paving on minor streets was in need of replacement, but not through lack of maintenance. Alleys at Brooklawn, N. J., had never been paved and at present are maintained largely by abutters with ashes from their furnaces. At Radburn, N. J., it was observed that the concrete park walks were breaking up in a number of places and that considerable deterioration had taken place in the concrete streets. This is hardly to be expected in such a new community. At Forest Hills Gardens, the original telephone poles of reinforced concrete were replaced with timber poles, owing to their dangerous condition. In general, the provision of good construction has prevented premature deterioration, and upkeep has been of a quality appropriate to the construction.

The second cause of loss in value, obsolescence, is the result of changes in the character of the public demand which any structure may have been originally designed to serve. This applies to public facilities as well as to houses. The house without electric lights or sanitary connections is really as obsolete as the house of the old "string" type with rambling sheds in the rear. Such innovations as complete sewer and water connections and houses two rooms deep, that were unique in Pullman in 1880, are commonplace and taken for granted today. Custom and forms of usage change and bear a direct relationship to physical provisions. It is because many of these changes have been anticipated in the communities studied, the maximum demands in any given case having been approached rather than the minimum requirements being barely met, that depreciation has been discouraged by physical resistence and early obsolescence avoided by continued fitness to demand.

Obsolescence may take one of two forms: First, as we have said, the outrunning of present fitness by new demands and new modes of living; and second, the diminution of original value by ill-considered changes in the nature or character of adjacent development. This lessened desirability will, of course, affect value as surely as will physical deterioration.

The protection of the fringes of any development against nonconforming or inferior uses, which is physically a matter of pattern and esthetically one of amenity, may be a very real protection against decreased desirability and, thus, lowered value of the existing development. The physical and esthetic aspects will be discussed later; the economic aspects, however, deserve mention here. Lowered values caused by the invasion of residential areas by nonconforming uses and inferior development are well known. However, in planning communities, these influences have been largely kept out by complete development, physical arrangement, or private and public restrictions. It is mostly at the periphery and spreading inward from the periphery that a lowering of community values has been caused by business and residential development of an inferior nature, created with the intention of realizing on the increment built up by the original development. The bad effect of the business development which has taken place along Mt. Ephraim Pike at Yorkship Village is indicated by the vacancies and relatively poor maintenance in the original development opposite. At Hilton, the highway, with its adjacent business and type of housing, forms a distinct contrast of desirability to the char-

acter of the interior, although here, these less attractive conditions were necessary and were so planned that they have not lowered adjacent values. Subsequent inferior development at the periphery of the original town at Brooklawn has made the original adjacent houses less desirable. At Forest Hills Gardens, however, the effect of the railroad right-of-way and the heavy traffic on the Interborough Parkway have been the causes which have definitely lowered property values for half a block to a block in from the periphery. In the several cases mentioned, as well as in others, a direct relationship is suggested between the lessening of desirability and resultant lowering of property values by adjacent influences and the subsequent deterioration of the physical structure itself, which deterioration may be attributed to a higher vacancy percentage, higher turnover in tenants, a lower class of tenants or owners progressively attracted, less return in rental, and therefore a smaller allotment for maintenance.

#### Retention of Identity

*Protection of the Periphery.*—What has been remarked as to the obsolescent and therefore depreciating effect on the whole community of improper development at its periphery may be considered further with relation to the protection of the borders of communities from inferior or nonconforming uses. It is worthy of note that the borders have, in general, been the weakest elements in the communities studied. While much attention has usually been given to the arrangement of the area *within* the confines of the periphery, but little attention has been paid to what may take place immediately *outside* this periphery. This is not necessarily the fault of either the planner or the developer, however, but is often the result of the impossibility for financial or other reasons of purchasing an excess of land around that portion to be immediately developed, of the financial burden of carrying this land, if purchased, of the present difficulties associated with complete land assembly in general, and of the lack of restrictions on adjacent land which would, if provided, give a degree of assurance to the developer as to the subsequent use of the land over which he has no control. Various communities, however, have made use of topographical and other existing features in protecting their borders in ways which are worthy of mention. It cannot be said that the sites were selected primarily for this protection, but it was undoubtedly a consideration in many cases.

Considering the difficulties inherent in protection of land owned by the community through regulation of adjacent land not owned, which have been mentioned above, it is not surprising to find that of 31 communities having some form of peripheral protection, 18 have for this or other reasons located adjacent to some form of water area, which has been an effective buffer against too close adjacent development. Fourteen of these have complete or partial boundaries formed by rivers or creeks, one is wholly bounded and one partially bounded by reservoir areas, three have utilized lake frontages, and one the ocean. In this form of buffer, use is fixed by natural limitations, and sometimes also by riparian rights and State or Federal control, which are restrictions usually lacking in ordinary undeveloped land, except where up-to-date municipal, county, or State regulation has been applied.

Other existing features have been effective in serving as partial boundary protection. Existing public parks occur in two cases. At Forest Hills Gardens, the park has not been entirely successful, due to the subsequent construction, as already noted, of a main traffic parkway between the park and the development. At Union Park Gardens, its success is unquestioned. Cemeteries partially protect the borders of three communities. Existing educational institutions with extensive grounds likewise form buffers in three cases, notably at Roland Park, where the sections of Roland Park, Homeland, and Guilford are partly protected by large grounds devoted to educational purposes. Difficult topography, that is, land not easily built upon, has been utilized in five cases, and railroad cuts or embankments in three. The latter, however, have not been particularly effective as they introduce other objections. At Forest Hills Gardens, the West Side Tennis Club grounds have been effective as a protection.

The disposition of proposed recreational facilities in such a way as to form partial or complete buffers has also been made in conjunction with the planning of these communities, although not to the extent that might be expected. In 10 communities, proposed parks; in 2, recreation fields; and in 4, golf courses were so located as to serve this purpose.

The most complete attempts to provide peripheral buffers have been at Norris, Tenn., and in the greenbelt towns at Berwyn, Md., Cincinnati, and Milwaukee. In all these cases, the buffers are land permanently devoted to agricultural and recreational uses, based essentially on the British Garden City idea. Likewise, most of the so-called company towns are in large degree protected through company-owned land surrounding the townsite and often devoted to allotment gardens for employees or farming and experimental grounds of the company. Thus, with the exception of the greenbelt towns, the communities founded by industry are more fully protected in this respect than any other type of community except, perhaps, several of the war housing developments, the outstanding example of which is Union Park Gardens. The Union Street boundary was protected by

acquiring both sides of the street on which residences were built. Part of Union Street and the southern boundary on Barry Street are bordered by public park and recreation area owned by the city. The community is protected from business development at the corner of Lancaster and Union Streets by the village green and a site, still vacant, in the residential zone, upon which it is hoped to erect a library. The opposite side of Lancaster Street is devoted to church and institutional use, while the western boundary of the tract is occupied by Cathedral Cemetery.

Peripheral protection must be adequate inside as well as outside the boundary of the community. At Union Park Gardens, the unusually thorough protection noted above is partially vitiated by the fact that the school and playground site planned in the development adjacent to the cemetery was never developed and is now filled with row houses of a later era which are totally foreign to the character of the original development. This condition is to be found not only at Union Park Gardens, but is typical of the war housing projects in general, where complete development did not take place. Yorkship Village suffered considerably from the intrusion of totally different and inferior development on vacant sites sold at auction after the war. Such development as this, where it occurs, defeats the purposes and largely the benefits for which the peripheral buffer is provided and shows clearly the desirability of complete and comprehensive development as well as planning. The houses subsequently erected at Cradock, Va., on vacant sites are not in character with the original development but are distinctly less objectionable than at Yorkship. Even at Hilton, which was almost completely developed, the erection of a different school and community building from that originally designed, although not creating an objectionable feature, nevertheless does not adequately carry out the original esthetic composition.

Another type of physical protection against adjacent development which may be mentioned is that used at Roland Park, Md. The high stone wall built along the boundary of York Road as a physical barrier to the sight of business development and the sight and sound of heavy traffic represents, in its considerable cost, the importance attached to the physical separation of uses as a factor in protecting an investment. The protection of the borders of a development by land options as practiced in the Country Club District, which is one of the largest items in the carrying charges, has continued in use over a period of years and has proved its sound economic value. While these latter cases represent high-cost developments, it is nevertheless clear that any development which has as its aim the building up of sound values and excellences must, in order to realize them entirely, be protected from inferior development at the fringe which realizes on an increment it did not create and, what is worse, transfers to its benefactor a blighting influence in the form of lowered values and obsolescence.

*Land Assembly.*—Before discussing the major planning factors which affect the permanence of the identity of the community, certain problems in connection with the acquisition of land within the community should be discussed. In several cases the unfortunate results which may attend the incomplete assembly of land are illustrated. At Kingsport the area known as the Groseclose property was never purchased. As it lies near the geographical center of the town site and occupies some 9 acres, its effect upon the resulting street system is at once evident by an inspection of the plan. A less evident effect is its subsequent use, influenced by the surrounding development and the increased value of the tract, to which it has contributed nothing. Such an area, without municipal restrictions, is open to exploitation for business, industry, or possible obnoxious uses without recourse of any kind. As it happens, at Kingsport, part of this area has become a school site, and the balance has been cut off from effective development. This does not, however, change the basic aspect of the problem. At Silvertown, Ga., a tract of some 30 acres lying near the center of the town is separately owned. It has not affected the street layout to any degree, but it is an ever-present menace to the adjacent planned areas which bound it on three sides. The property is for sale, but at a very high price. An inspection of the property map of Radburn shows strikingly the unfavorable potentialities of uneven land assembly and the problems encountered by development companies in purchasing and carrying extra land not actually needed for either development or peripheral protection in order to obtain what is needed, at the same time being unable to obtain needed parcels because of prohibitive costs or other factors. These considerations are directly reflected in the physical plan and in the ever-present uncertainty of the future use of such land to the possible detriment of the new community. The developer is thus often faced with either paying unreasonable prices for such land or "taking a chance," as has been done at Kingsport and Silvertown.

*Articulation of the Plan and Stability of Use.*—The form and arrangement of the plan with relation to access, convenience, and appearance has been discussed elsewhere in this study. However, in addition to many specific effects, the relationship of the various parts of the physical layout to the function they serve and the form which they therefore take individually and collectively has a direct influence in fixing upon the

community a character and individuality which sets it apart from the ordinary "unplanned" type of development.

The form which this physical layout takes may often also determine the relative stability of use and value and, consequently, may help to insure the retention of the community's distinctive qualities. While it is too often true that a community has to defend itself against loss of its identity by depending almost entirely upon restrictions or other forms of legal control, such restrictions are of little use without a unified militant enforcing agency—something which seldom endures continuously for long periods in our political organizations. However, the various parts of the community can be arranged in a physical form which encourages, often almost compels, the continuation of the use originally planned for them. This arrangement requires considerably more in a business district, for instance, than differentiation of street widths or variation of lot sizes, as has been done in so many cases. The present "normal" block and lot arrangement is merely a perpetuation of the philosophy of the convertible pattern which can be made to serve any purpose but which serves no one purpose well. Examples of this type of plan may be found in the arrangement of the business district at Fairfield, Ala., and Goodyear Heights, Ohio, or of the business and industrial districts at American Falls, Idaho, and Longview, Wash.

Entire convertibility, considered as an advantage, is based on the belief that any part of a town, large or small, may properly change from its present use to any other use. City planning is based on fitting form to function, not merely in the individual lot but in considerable areas, each devoted to its own special primary use. This inevitably tends physically to prevent or delay the conversion of individual parcels to uses not contemplated in the area containing them. This is, like all restrictions, a taking away of certain opportunities from the individual, but also, like all restrictions, if it is intelligently done, it returns more in general benefit than it takes in individual privilege. Like zoning, it must be comprehensive. It restricts some uses almost everywhere, but it provides adequately for all good uses somewhere. Physical planning, like zoning, should not produce land monopoly by insufficient opportunity for growth. It does not even discourage change, as such, but it contemplates change only where needed, when needed, and by units of functional area, not merely by accidental units of individual ownership.

One of the difficulties at Forest Hills Gardens has been the constant pressure of outside interests to break down the restrictions which protect the development at points where the layout is not sufficiently peculiar to the use designed for it. One of the best features of the cul-de-sac as used at Radburn, Forest Hills Gardens, Roland Park, and elsewhere is its specific inseparable relation to the type of use for which it was planned. The tendency in these communities to create pressure for apartments, business or other nonconforming uses is thereby diminished.

This suggests that more attention should be given to the physical elements which attract or discourage any particular use of land and to design for specific uses, making these uses fit their specific site and relating them to each other so that pressure for other uses may be minimized.

*Summary.*—Briefly, the factors which have been discussed in preserving the character and individuality of these planned communities are:

1. The existence of natural or artificial peripheral buffers.
2. The provision for new peripheral barriers as part of the plan either primarily or incidentally as protection.
3. The control of land beyond the periphery.
4. The articulation and stability of the physical plan.

**Physical Provisions Affecting Social Factors**

*Parks and Playgrounds.*—The physical form which public open spaces take in planned communities has already been discussed briefly in relation to their disposition in the general plan. Their significance in the social life of the community is, however, one of their major aspects. The relative importance which has been attached to community recreation facilities

CAPILANO ESTATES
WEST VANCOUVER, B. C.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | LOTS INCLUDE APPROX. .97 ACRES OF BUSINESS |
| RESIDENTIAL | 73.6 | 66.5 | |
| TOTAL | 73.6 | 66.5 | NUMBER OF LOTS - 416 |
| SEMI-PUBLIC AREAS | | | AVE LOT AREA - 1.77 ACRES |
| GOLF COURSE | 16.4 | 14.8 | |
| TENNIS BOWLS, ETC. | 3 | .3 | |
| POLO RINK, STABLES | 4.8 | 4.3 | |
| TOTAL | 21.5 | 19.4 | |
| PUBLIC AREAS | | | |
| PARKS | 5.2 | 4.8 | |
| SCHOOL GROUNDS | 1.0 | .9 | |
| TOTAL | 6.2 | 5.7 | |
| STREETS | | | |
| ROADS, PATHS, ETC | 9.3 | 8.4 | ROAD LENGTH - 1.7 MILES |
| TOTAL | 9.3 | 8.4 | BRIDLE PATHS - 7 MILES |
| GRAND TOTAL | 110.6 | 100.0 | |

DATA ON BUSINESS — OBTAINED BY SCALING MAP
SCALE OF MAP : 1" = 1200'

Table 25.

is indicated in part by the amount of area which has been allotted to public and semipublic use in relation to the size of the expected population. It is true, however, that in many cases more land was acquired than could be effectively used at once, and that the open areas thus left have been called recreation areas without having been specially planned, developed, or much used as such.

The following tables summarize the percentage of public and semipublic open spaces in relation to the total area "planned," as previously defined (see p. 126), for residential, business, and recreational purposes combined, where information was available. The percentages shown do not necessarily indicate existing conditions.

TABLE 26.—*Communities founded for industrial purposes by industrial and governmental agencies*

| Development: | *Percentage of area for recreation (percent)* |
|---|---|
| Fairfield, Ala | 4 |
| Loveland Farms, Akron, Ohio | 5 |
| Mare Island, Calif | 7 |
| Longview, Wash | 8 |
| Hilton, Va | 14 |
| Union Park Gardens, Wilmington, Del | 15 |
| Overlook Colony, Del | 15 |
| Noreg (Brooklawn), N. J | 16 |
| Vandergrift, Pa | 16 |
| Kapuskasing, Ontario | 16 |
| Morgan Park, Duluth, Minn | 17 |
| Cradock, Va | 19 |
| Yorkship Village, N. J | 20 |
| Kingsport, Tenn | 20 |
| Chicopee, Ga | 22 |
| Kohler, Wis | 22 |
| Atlantic Heights, N. H | 25 |
| Boulder City, Nev | 25 |
| Kistler, Pa | 30 |
| Average | 16.1 |

TABLE 27.—*Communities founded for residential purposes by real estate and philanthropic agencies*

| Development: | *Percentage of area for recreation (percent)* |
|---|---|
| Forest Hills Gardens, N. Y | 4 |
| American Falls, Idaho | 10 |
| Greenbelt, Md | 14 |
| Chatham Village, Pittsburgh, Pa | 16 |
| University Endowment Lands, British Columbia | 16 |
| Radburn, N. J | 17 |
| Mariemont, Ohio | 24 |
| Palos Verdes Estates, Calif | 25 |
| Capilano Estates, Vancouver, British Columbia | 25 |
| Westover, Mass | 30 |
| Average | 18.1 |

Certain factors which influence this percentage of open-space area are not evident in the table and should be noted. At Longview, Wash., the percentage is based on the area within the original city limits, excepting the industrial areas and also excepting Cascade Hills and Sunset Addition, which are essentially rural in their character and therefore so different from the rest of the development that their inclusion would produce a meaningless average for Longview. At Chicopee, Ga., the open land outside the border devoted to allotment gardens and farms is essentially the same as the "greenbelt" areas surrounding Norris and Greenbelt, none of which is included in the above percentages. Morgan Park is surrounded by a considerable open space in the form of water area. Union Park Gardens, in addition to its own open spaces, is directly adjacent to a large area of city park. Chatham Village also adjoins a park area of 23 acres which was specifically designed for the use of this community. At Fairfield and Yorkship, the open space area would be increased, and the street area decreased proportionately, if the center park strip in the parkways were considered as recreational open space. At Kistler, the relatively large church sites and certain areas of unbuildable topography caused a percentage of otherwise unused land to be thrown into open space.

From an area relationship, it is evident that the planned communities here considered allot within themselves approximately one-sixth of their planned area for some form of recreational and open space use, with little difference between those developed by industrial, governmental, real estate, or philanthropic agencies. Bearing in mind the modifying influences mentioned above, there is clearly evident a tendency to increase the open-space provisions in the new communities developed both by private and by public agencies. Also, it is plain that it is not only the amount of area so allotted, but the disposition of this amount that determines its efficiency. The central compact park area, the linear marginal park area, the scattered local park area, and the linear interior park system have already been mentioned in connection with physical arrangement of the plan.

Any of these arrangements to be effective must serve its allotted purpose qualitatively as well as quantitatively. Thus, the parkway will have one characteristic form and location, the recreation field another, and so on, according to its use and according to the location of the population who use it. At Union Park Gardens, a portion of the central parkway has been allotted to active recreation by the city, but recreation is mostly provided for in the adjacent city park. Brooklawn provides little else at the present time besides the school playgrounds and the excellent tennis courts, which have been a considerable factor in attracting adult population. The physical division of Brooklawn already mentioned makes an even distribution of community recreation areas difficult. Here, as at Yorkship Village, there is a tendency to use as play spaces the small public par-

eels in front of house groups, which are neither adequate nor desirable for the purpose. At Cradock, the Afton Parkway separates the community into two units, the open spaces being provided at either end of the cross axis, the school at one end, the park at the other. Kingsport has no adequate open space provisions except the golf course, which, however, is now being converted into a residential district, and the high-school grounds, devoted to an athletic field. At Forest Hills Gardens, the "village green" is used almost entirely as a passing-through park and would be inadequate and inappropriate for more intensive use. The school grounds are entirely inadequate, and the site immediately in front of the school now in dispute for the erection of an apartment group has been appropriated by the children as a playfield. The park at Burns Street and Park End Place also serves largely as a passing-through park, and the interior private park areas have not proved entirely satisfactory. We have already seen at Radburn the significant effect that the arrangement of recreational provisions has had in encouraging community solidarity. At Hopedale, Mass., the original mill pond, now used as a recreational water area, happened to be near the center of the community, with the playfield and community building later located nearby. At Fairfield, in spite of the relatively small area in open space (aside from the center parkway strips), this area, which is located near the center of the community, as now developed has formed a social focus for outdoor activities, although the provisions as anticipated by the proposed civic center have never been realized. Much the same relationship applies at Chicopee, Ga.

The essential effect of this disposition of open space at the center has been to focus the attention of the community inward, instead of outward, upon an area large enough to form a usable community gathering place. The reverse condition, which has taken place even in the smallest of communities which "just grew" (with the exception of the communal function of the New England common, which was the result of planning), has invariably resulted in the business center being the focus of the community. This will be further discussed below as an aspect of location of community facilities generally.

*Community Activities and Provisions Other than Parks.*—The provision of various community facilities in the form of schools, churches, community buildings, hospitals, and the like depends largely upon either the community's size or wealth or upon some form of subsidy. Community activities, however, are more the direct result of social solidarity and spirit. The following discussion gives an indication of the experience of planned communities which are separate entities ranging in size from 1,000 to 20,000 population.

Chicopee, Ga., is typical of the best form of subsidized and paternalistic company town. The fact that it is quite new affects to some extent the amount of community facilities provided. The grade school, which is owned and operated by the company, is at present housed in a temporary structure. A situation typical of the southern textile town is the almost equal division of two religious denominations. With a present population of 1,025, it has not been economically feasible for either the Chicopee Manufacturing Co. or the inhabitants to finance the building of two churches. However, if the town eventually grows to the population of around 2,500 planned for, it is expected that two churches will be practical. Two churches were planned and sites are being reserved for them. A community house has been provided and is equipped with one of the best medical clinics to be found in the South, recently receiving an award from the American College of Surgeons. The services of this clinic are rendered free or at a minimum charge to the community.

The community building is typical of the better company towns. Outstanding examples of this type of provision are to be found at Hopedale, Whitinsville, and Hershey. Whatever may be considered the advantages and disadvantages of this method of subsidy, the population of these communities are receiving facilities for a community life which could be realized in no other way. At Fairfield, Ala., it is doubtful if the community, where the average wage for white wage

UNIVERSITY ENDOWMENT LANDS, B.C.

| LAND USE | AREA IN ACRES | PERCENTAGE OF TOTAL | MISCELLANEOUS DATA |
|---|---|---|---|
| LOTS | | | NUMBER OF LOTS – 4250 |
| RESIDENTIAL | 1644.0 | 61.1 | AVE LOT AREA – 3.86 ACRES |
| APT. HOUSE SITES | 21.2 | .8 | |
| BUSINESS | 7.6 | .3 | |
| TOTAL | 1672.8 | 62.2 | |
| SEMI-PUBLIC AREAS | | | |
| FRAT & SORORITIES | 8.5 | .3 | |
| CHURCHES-PRIVATE ETC | 7.0 | .3 | |
| PRIVATE GOLF COURSE | 131.0 | 4.8 | |
| TOTAL | 146.5 | 5.4 | |
| PUBLIC AREAS | | | |
| PUBLIC BUILDINGS | 10.0 | .4 | |
| PUBLIC SCHOOL AREAS | 17.2 | .6 | |
| PARKS & PLAYFIELDS | 140.0 | 5.2 | |
| PUB GOLF COURSE | 125.0 | 4.6 | |
| TOTAL | 292.2 | 10.8 | |
| STREETS | | | |
| ROADS & ISLANDS | 581.0 | 21.6 | |
| TOTAL | 581.6 | 21.6 | |
| GRAND TOTAL | 2692.5 | 100.0 | |

DATA FROM OLMSTED BROTHERS.

TABLE 28.

earners is $2,430, could provide the hospital facilities furnished by the Tennessee Coal, Iron & Railroad Co. and rated as among the best in the South. Kingsport now has a hospital erected within the last few years through popular subscription and is the only town visited, beside Fairfield, Ludlow, and Hershey, having full hospital facilities.

The separate communities are typically provided with grade schools. Here again, subsidy, either from industry or from government, has often been a factor. The communities of Hilton, Cradock, Brooklawn, and Norris have in no case yet the population nor the income to provide for themselves such facilities as those which were erected by the Government. It has been difficult for the incorporated town of Brooklawn, with a population of about 2,000, to support a school, but this case is peculiar, since until recently most of the property, being Government owned, paid no taxes. Hilton and Cradock are in more fortunate circumstances. They are both under the county system, which arrangement has apparently been entirely satisfactory. Radburn's school is part of the Borough of Fairlawn system. The facilities offered at Norris are far superior to those found locally and represent a subsidized demonstration, which should be so considered. Furthermore, the Norris schools are Government operated, while the others mentioned are subsidized as to the physical plant only.

Another factor which should be considered in connection with community activities is the type and homogeneity of the population. At Radburn, we have seen the dissatisfaction which arises when families of different incomes demand the same facilities from the operating association. Brooklawn and Cradock are communities with varied income and population types, working at many trades in many different places. Brooklawn has attempted to encourage a community spirit without success. Cradock lacks both municipal organization and a homogeneous social group. In general, the communities which seem to have developed the best community spirit are those with a definite degree of homogeneity and a comparable income level. This does not prove the impossibility of unity of spirit in the community of varied income and characteristics, but does suggest the possibility of groups of communities, each having its own more or less consistent economic and social character. This is a natural tendency. The suggestion here is to make better provision for these tendencies by the form and arrangement of the physical plan.

The above discussion suggests the limitations placed upon certain community facilities by the small size and income of the population. It will be noted that these limitations fall most heavily upon the provision of adequate school, church, and hospital facilities and that except where subsidy of one form or another is present, the smaller the community or its income, the greater the difficulty for a separate community to provide adequately for its own needs. Whatever the circumstances, this has a direct bearing on the provisions of the physical plan.

From the experiences in the planned communities visited, certain further observations may be made, noting that the minimum population required to support any facility will vary inversely with the income of the population:

1. That a community of 1,000 to 1,500 population is the minimum limit for the provision of one church, which would represent physically the importance of religion in this community, and that only where a fairly homogeneous group exists.
2. That 2,000 to 2,500 population is the minimum limit at which a good grade school may be supported either financially or in relation to the number of children in attendance.
3. That 15,000 to 20,000 population is the minimum limit at which adequate hospital facilities may be provided in any form except a clinic.
4. That community facilities in the form of parks, playgrounds, or other open spaces are usually more easily possible for the small separate community than for the larger town.
5. That a community spirit is not dependent upon size but rather upon factors, physical and social, which stress common opportunity and common responsibility.
6. That these factors are of major importance in determining the location of a community.

#### Centralization and Decentralization of Community Facilities

The important consideration here is to determine which of all the public functions shall be centrally located and which shall be, under the particular circumstances, peripheral or scattered. There are some valid reasons for believing that the placing of business at the center is not necessarily a desirable location, particularly in the type of communities herein studied.

1. A pressure is created at a point, resulting in intensive use, the introduction of through traffic into the center and, with the growth of the community, a continued increase in congestion.
2. Such centralization tends to produce radial thoroughfares, and so to break the community into segments, often too small to have an identity of their own. This frequently creates the necessity of locating community facilities such as schools and playgrounds where they are separated from some of their users by main thoroughfares.

3. If "community" is to be taken in its true sense as a society of persons, it follows that the expression of this concept should be translated into a physical form which will encourage its best realization. Business alone, as a focal center, expresses only one side of economic unity.

On the other hand, the following reasons may be suggested for providing a community center in its literal sense and grouping business at a point on the periphery.

1. The attraction which business exercises is directed outward, not inward.

2. Through traffic may then be relegated to the periphery, to the advantage of both the business and the community, leaving the central area accessible without separation by through traffic streets and unified for its proper use for other community activities and for residence.

It is not intended to suggest by this discussion that a central business area is not possible or even desirable, but rather to suggest the possibility of replacing indefinite expansion with "unit" development. Some proportion of business is always most conveniently central. When a small town can support but one or two stores of a kind, naturally these seek the center. When a town grows, the stores, of which there are by that time many, may seek scattered location in local subcenters; but wholesaling, banking, and such activities usually remain centralized.

Town government, as expressed in the "town hall," is usually centralized and remains so in the city of considerable size.

For economic reasons and for convenience, religious activity, in our country of many creeds, is likely to produce scattered churches.

Recreation facilities, since accessibility and not too high intensity of use are desirable, tend to be scattered in relation to tributary districts in the same way as schools, with which they should have close interrelation. The larger recreational units tend to be on the periphery for obvious reasons of land cost and avoidance of interruption to radial traffic.

The arrangement which might be considered "natural," therefore, would be a centralization of the provisions for governmental structures, and of such business as is used by all the community or necessarily juxtaposed, together with various other generally used structures according to circumstances and some communally used open space, and the peripheral location of most other services.

**Self-Sufficiency of the Planned Community.**

The degree of self-sufficiency of a community is essentially the degree to which the employment in the community provides a livelihood for its inhabitants and the degree to which these earnings are spent within the community, which includes the provision for recreation, amusements, and religion, as well as that for retail trading and shopping. It is evident that there is scarcely a community today, however large, which is entirely self-contained in any of these respects. Many persons living in Washington prefer to shop in Baltimore, while approximately 300 Government employees commuted from Baltimore to work in Washington every day in 1934, according to a survey made in that year. A similar condition applies in all of our metropolitan areas. However, certain minimum elements of self-sufficiency may be looked for in any community, however small, and the degree to which a community is self-contained as to employment and as to trading may be expressed in terms of the approximate percentage of wage earners living in the town who are employed in local industries or establishments and the approximate percentage of money spent by the inhabitants of the town which goes to local stores for food, clothing, incidentals, etc.

*Self-Sufficiency as to Employment.*—The communities which have been founded for industrial purposes range in self-sufficiency of employment from 0 to 100 percent. If such communities as Firestone Park, Goodyear Heights, and the war housing towns which still largely house the employees for whom they were originally designed, but which do not include industry as an integral part of their own development, are included, the average is 65 percent. Excluding these cases, an average of 83 percent is obtained.

It is interesting to observe that, although established primarily for industrial workers in a local industry, the industrial towns where no company control in the form of complete rental has been exerted have tended to become the residing places of wage earners working elsewhere. This is notably true in Firestone Park, where 50 percent of the wage earners work elsewhere than in the Firestone Tire & Rubber Co., and in Torrance, where 35 percent work elsewhere than in local plants, and especially in Ludlow, founded primarily for workers in The Ludlow Associates plant, where 70 percent work elsewhere. The factor of economic or technological changes in the local industry, because of which it no longer provides for all the wage earners of the community, is as often responsible for this shift as are the preference and opportunity to work elsewhere.

The question of sufficient employment within the community is also affected in the company towns by the fact that a number of them provide only for the key employees or those essential as a skeleton organization. That is, the industry, having stabilized that part of its personnel which must be stabilized from its point of view, is not willing to spend money to stabilize the whole community. Indeed, there is some argument

that, for the advantage of the town itself, the inherently unstable population would better be housed elsewhere if possible. This condition is reflected in the percentages of wage earners working in the local industry who also live in the community. At Hopedale, for instance, provisions are made largely for the permanent and key employees. Formerly, boarding houses were provided for single men and for married men with families living elsewhere who went home only over the week ends. Since the advent of the automobile, this population now commutes daily to nearby towns, and the boarding houses are largely out of use. At Hopedale, the boarding house has been converted into an apartment house in an effort to attract the older married people in the town, most of whose children have left home, in order that the larger houses which they now occupy may be again available for larger families. At Whitinsville, all but one of the four boarding houses originally needed are now idle and that one, now the Blue Eagle Inn, is only partially filled. Whitinsville, in contrast to Hopedale, provides for a considerably greater range of incomes and population types, as well as for the keymen. This relative completeness of housing provision is, of course, greatest in the most isolated towns. Representative of relative isolation are Silvertown, Ga.; Chicopee, Ga.; and Vandergrift, Pa. Kingsport represents at present a town whose physical plan has not been able to keep up with the growth of industry and consequent housing needs. Alcoa has much the same status, although the physical growth of the town has been temporarily arrested, apparently by general economic and industrial conditions.

In no case noted, except in several isolated Canadian towns, does the industrial community house the entire personnel working in its industries. In many instances, employment is afforded for a substantially larger earning group in local industry than can be housed in the town at present. The degree of self-sufficiency in employment of a community does not necessarily indicate that no wage earners in the local plants live elsewhere. Moreover, the estimates of self-sufficiency in employment of a community are based on the occupation of the principal wage earner in the family and do not necessarily include all members of the family. That there is a distinct pressure created by the tendency of workers living outside to either rent or own homes in the community is indicated by the low turnover and the low vacancy percentage in the company towns.

COMPARATIVE ANALYSIS OF WAGE EARNERS 1936

| Symbols: x = Percentages used are those for adjacent ship yards (Portsmouth and Norfolk). • = Other than the Newport News Sh. Building and Dry Dock Co. | Population | Number of Families | Wage Earners in Local Industries | | | | | Wage Earners Living in Community | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number of Wage Earners | % Unskilled | % Semi-Skilled & Skilled | % Clerical & Office | | Working for Local Industry | | Working Elsewhere | |
| | | | | | | | | Number | % | % | |
| Alcoa, Tenn | 5225 | 1340 | 3394 | 77 | 14 | 9 | | 1020 | 30 | 3 | Adjacent to Maryville 13 m South of Knoxville |
| Chicopee, Ga | 1025 | 256 | 530 | 93 | 6 | -1 | | 398 | 75 | 0 | 4 m from Gainesville |
| Cradock, Va | 3500 | 700 | | •15 | •70 | •15 | | | | 100 | In Norfolk Met Dis |
| Fairfield, Ala | 11059 | 2760 | | W-8 C-80 | W-90 C-20 | W 2-3 | | | 60 | 6 | Adjacent Birmington |
| Hilton, Va | 1750 | 350 | 350 | 25 | 25 | 50 | | | | •10 | In Norfolk Met Dis. |
| Hopedale, Mass. | 3068 | 768 | 2000 | | | | | 1300 | 65 | 10 | 2 m from Milford |
| Indian Hill, Mass. | 580 | 166 | 2500 | 52 | 32 | 16 | | 125 | 5 | 4 | Suburb of Worcester |
| Kingsport, Tenn | 18000 | 4500 | 7000 | 15 | 65 | 20 | | 1750 | 25 | 1- | Self-Contained City |
| Kistler, Pa. | 455 | 91 | 355 | 14 | 81 | 5 | | 124 | 35 | 0 | ½ m from Mt Union |
| Kohler, Wis. | 1850 | 450 | 3200 | 63 | 31 | 6 | | 640 | 20 | 0 | 4 m from Sheboygan |
| Ludlow, Mass. | 8569 | 2120 | | 40 | 60 | | | | 30 | 70 | Adjacent Springfield |
| North Plymouth, Mass. | 1375 | 340 | 955 | 19 | 70 | 11 | | 400 | 42 | | Suburb of Plymouth |
| Peacedale, R. I | 1500 | 370 | 650 | | | | | 585 | 90 | 2 | In South Kingston |
| Silvertown, Ga | 3200 | 790 | 2200 | 5 | 93 | 2 | | 1650 | 75 | 25 | Adjacent Thomaston |
| Torrance, Cal. | 8270 | 1890 | 3500 | 4 | 86 | 10 | | 2280 | 65 | 35 | In Los Angeles Met Dis. |
| Vandergrift, Pa | 11479 | 3020 | | 20 | 70 | 10 | | | 95 | | Self Contained Town |
| Whitinsville, Mass. | 6000 | 1500 | 2700 | | | | | 1490 | 55 | | In Northbridge |

Table 29.

The matter of partiality to certain groups of employees in company owned or controlled towns with relation to housing provisions has been a source of criticism. The observation was made that this problem was especially acute in one specific case, where a certain industrial village adjoins a larger urban area and where the competition for labor creates higher wages and higher rents than would be the case in an independent company-owned town. Company rents here, however, are about 50 percent of those charged for inferior housing in other parts of the area. In this case, about 350 company houses for varied income groups were available for some 800 employees, making the question of who should receive the benefits a real problem. Four solutions are possible under these conditions or similar ones:

1. Build enough houses for all the employees. This would not be considered for reasons discussed below.

2. Sell all of the houses to the employees. In this case, a number of row, group, and multiple houses existed which would mean unsatisfactory individual ownership or a landlord for the whole building, presumably charging rentals at least as high as those found elsewhere.

3. Raise wages of employees living outside. This is obviously not feasible.

4. Raise rents on the houses. This is the most feasible of the solutions, but even here the company has no desire to enter the real-estate field for profit, which it would do by putting rents on a par with outside rentals.

In regard to the first proposal, it seems likely that industry will continue to experience fluctuations in employment, according to economic conditions and technological changes. It must, however, have stability in the skeleton organization which is essential to its operation. The criticism that partiality is attached to providing for a group composed of the more skilled, capable, or stable, or for those longer in the employ of the company, seems to be hardly justified. If the low rents be considered as in lieu of higher wages, the procedure is merely the differentiation of wage groups

according to skill and capability. For the industry to house its entire employ at any one time would be reasonable only on the assumption that it can continue economically to employ that number. In regard to the second suggestion, this practice has been successfully followed in such cases as Goodyear Heights, Fairfield, and Hilton for the relatively higher income groups. In many cases, the industry has felt the need for an agency adequately to bridge a transition period, as in Alcoa, Tenn. In such cases, whether housing is to be kept for rental or eventually offered for sale should determine the type of housing constructed since row and group or multi-family housing is not adapted to individual home ownership. All of these factors will have a direct bearing on the ability of the town planned by industry to continue to serve its original purpose in providing places of residence for its own employees.

Local employment in communities founded for residential purposes is relatively low, ranging from 0 to 100 percent, with 10 percent as an average. This figure is affected by the inclusion of American Falls, Idaho, which, although not an industrial community, employs its wage earners within itself. Most of these communities include employees and proprietors in local service businesses. It is suggested, with reference to the comparative table of income groups, that a considerable number of the inhabitants of these communities may not even be dependent upon active participation in local business or industry for their livelihood, since they may derive their incomes from invested capital.

*Self-Sufficiency as to Trading.*—In the matter of self-sufficiency in trading, there is a somewhat closer relationship (of relatively little significance, however) between the two main types of communities herein discussed. In this respect, the industrial communities have the following distinguishing characteristics:

1. They are a more segregated and self-sufficient group, both geographically and economically, as may be noted by the range in the amount of trading done within their borders.

2. They are a considerably lower-income group and consequently one likely to trade at nearby stores, being without the means of "out-of-town" purchasing, except through occasional visits or mail-order catalogs.

3. They are usually provided with a company store, which tends to encourage local trading as no cash changes hands and a fairly complete line of essentials is in stock or soon available. However, no indication of pressure to purchase at the company store was discovered in the selected communities studied; for example, at Chicopee, Ga., the company-owned store receives about 50 percent of the trading, the rest being done largely in Gainesville, or at Silvertown, where stores are operated by private proprietors. Hershey operates through the Hershey Estates a large and complete department store which is patronized by persons all over the surrounding region. In this connection, the company store operated by the Tennessee Coal, Iron & Railroad Co., at Westfield, is of interest. As it operated originally for employees, criticism was encountered that it was operated on a policy of exploitation. The store was then voluntarily opened to the public with the result that its business increased 40 percent. However, the store is operated on a profit-making basis. It follows prices quoted daily by a chain store operating in the Birmingham region. In addition, a protection is given the purchaser which is not found in other stores, namely, that all foodstuffs are rigidly inspected and approved or rejected by the company medical staff in charge of sanitation.

Among the industrial communities, trading ranges from about 1 percent, at Yorkship Village, N. J., which lies within the city of Camden and has a large business section adjacent to it, to 100 percent, at Kapuskasing, Ontario, an isolated and wholly self-contained pulp and paper town, with a small rural region of its

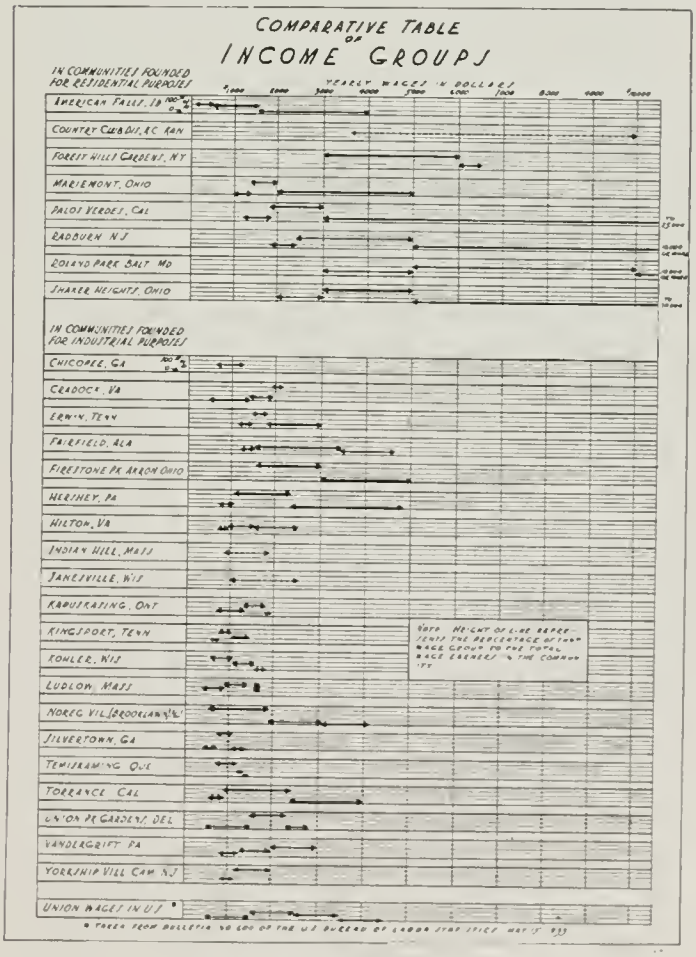



Table 30.

own. The average for communities where data were available is 45 percent local trading.

The communities devoted to purely residential purposes range in self-sufficiency of trading from 0 percent to 75 percent, with an average of 23 percent. It is interesting that Shaker Heights, Ohio, essentially a suburb of Cleveland, with a population of about 20,000, depends on its own facilities for only about 15 percent of its trading, while the Country Club District, a part of Kansas City, with a population of about 25,000, provides for about one-third of its own trading. It should be pointed out, however, that these figures are authoritative estimates but not necessarily based upon clearing-house transactions.

The self-sufficiency of trading in a community founded either for industry or for residence has a direct bearing on the provisions of the physical plan. We have already seen in Fairfield the result of too much area being allotted to business, with little likelihood of its ever being so used. The same criticism applies to Kingsport, with the difference that here a population capable of supporting the business frontage may later eventuate. No fixed rule of thumb will apply to every individual case, but a thorough study should be made of the proximity, character, and adequacy of nearby existing business provisions and the type and income of the expected population, and the estimates so evolved checked against available knowledge of general norms, before the extent of any business area is determined. Too little area may mean monopoly by the shops fortunate enough to locate there, while too much area will react unfavorably in the form of scattered business and costly maintenance of excess public utilities by the community. An immediate over-provision of business frontage can hardly be justified except on the basis of well-founded expectation of reasonably early future growth, and such provision is certainly not justified merely for speculation purposes.

If the area of the tributary region and the optimum population density for that area can be determined, it is possible to fit the business area economically to the need and avoid both too small an area and too large an area. If, however, the ultimate tributary area is unknown, there is no way of avoiding the difficulties mentioned above if the area is to be served by a single business district. The effective way, therefore, to provide for indefinite expansion (or, for that matter, gradual expansion to a definite limit over a long but indefinite period) is to plan for expansion by units, each unit providing its own facilities of all kinds, excepting only those few which must be single and central in any case, these being found in the last analysis to require only a relatively small percentage of the total area. In this manner, the growth as it comes can carry with it its own facilities. Thus, growth and change are to be accomplished not by the undifferentiated extension of the lot system and adaptation of individual lots to changing uses, but by organized provision of community or neighborhood units.

The institution of commercialized recreation is worthy of special mention in connection with the self-sufficiency of the planned community. It is obvious that the private moving-picture theatre will locate only where there is already a sufficient population to support it. Kingsport at present has three movie houses, one of which is second rate; Vandergrift has two; Torrance, one; and Fairfield, none. Among the smaller communities, Silvertown and Hershey are the only ones providing movie houses, for a population of 3,200 persons and 2,800 persons, respectively. Both are subsidized by the company. The latter, however, because it is better than the average, as is typical of the facilities of Hershey in general, attracts, as does the department store, a large patronage from outside the town. The park at Hershey may also be mentioned in this connection as it draws patronage from Harrisburg and other urban centers, and partakes of the character and is run on the basis of a profit-making amusement park by the Hershey Estates. It does, however, afford recreation and amusement facilities for Hershey as well as the surrounding region, a situation not usually found except in much larger metropolitan areas. As far as commercialized recreation is concerned, Hershey offers more in the nature of a public-resort town than any of the other communities studied, with the possible exception of the Florida towns.

*Self-Sufficiency of Community Life.*—Community facilities have already been discussed and their general limitations considered. Radburn and Forest Hills Gardens were found to be two of the most satisfactory communities in this respect, though certain limitations of the latter with respect to size of population and range in income were pointed out. The self-sufficiency of community life in Radburn is reflected in two interrelated circumstances:

(1) As reported in the study made of Radburn in 1934 for the American Association for Adult Education and published as *Radburn: A Plan of Living*, about 81 percent of the men and women were found to participate in three or more community activities. Participation in recreational activities, based on 320 men and 366 women, was as follows:

| | Percent of men | Percent of women |
|---|---|---|
| Participation in at least 1 recreational activity | 90.3 | 77.87 |
| Participation in at least 2 recreational activities | 72.5 | 56.3 |
| Participation in at least 3 recreational activities | 57.18 | 34.6 |
| Participation in at least 4 recreational activities | 38.75 | 13.39 |

2. Evidence of the comparatively limited extent to which the theater and moving pictures are attended elsewhere by residents of Radburn, where no such facilities exist, appears in the following quotation from this study:

> Seventy-five percent of the Radburn families attend the theater (as distinguished from the moving pictures) three times or more a year. One-third of these attend as often as six times a year, and one-sixth as often as once a month. Nearly 95 percent of the theatergoers go to the theaters in New York City; about 4 percent go to Newark theaters, and less than 1 percent to Jersey City theaters.
>
> Eighty-seven percent of Radburn families go to the moving pictures six times a year or more. Four-fifths of these go at least once a month, half go once every 2 weeks, and one-third go at least once a week. Forty-four percent of the families attend Paterson theaters, 33 percent go to Hawthorne, 7 percent to Hackensack, 4 percent to Ridgewood, and the attendance of 12 percent is scattered among the theaters in various other towns and communities nearby.

It is worth noting, in connection with community self-sufficiency, that an evident indication of community consciousness, individual to each community, was expressed by the consciousness of the workers (many of whom were talked to casually during the field study) that they were living in a community which was different from the ordinary type of development, that in many ways they were provided with facilities which were better, and that, without analyzing it further, they were part of a distinct and well-related unit that had been laid out all as one entity. This was, of course, particularly true in the southern towns, where the transition has been the greatest and most recent. Certain demoralizing factors, such as those noted in section 2, as being experienced recently at Goodyear Heights, are beyond the control of any physical plan. It is believed, however, that the physical plan has almost invariably been a major factor in cementing the individual interests of the planned community into one substantial form of better living and self-sufficiency, and that, in turn, this attitude has helped the maintenance of the plan. This belief is borne out by the number of industries which consider that providing this type of community life in its best physical form is purely a matter of good business.

#### Amenity

It can fairly be said that some capacity to enjoy the good appearance of things is just as inherent in mankind as the capacity to enjoy a pleasant taste or a pleasant sound. Good appearance in a town or a neighborhood, if economically arrived at, is just as real and salable an asset as any of the provisions for meeting human needs and desires that have been already discussed. It is, of course, true that when the total means are insufficient to produce an ideal environment, the provisions which are neglected or reduced are those which can be so treated with the least danger of absolute catastrophe. The effects of lack of food, for instance, are immediately apparent. The effects of diminution in the good appearance of the surroundings may be negligible down to a certain point and may be slow in making their appearance even below that point. For these reasons, we have, unfortunately, become accustomed to towns and neighborhoods built for profit, in which appearance has been greatly neglected.

This report is not the place for a disquisition upon the nature of beauty. It can, however, be said without raising any particular controversy that the good appearance of a community will rest on three factors:

1. The good appearance of the individual objects which go to make up the community, such as houses and bridges and streets.

2. The effect of unity, of consistent organization, of comfortable relation of the parts to the whole, which makes the community produce a consistent and, therefore, pleasant effect rather than a confused and incongruous and, therefore, unpleasant effect.

3. Another cause of the pleasant impression which a community may make is, in a way, the result of the two causes mentioned above, but it is somewhat more indirect in its effect on the observer. If all the streets, whatever their plan, are well kept, if all the houses, whatever their shape, are clean and well painted and surrounded by trim grounds, the town appears to be the dwelling place of decent and self-respecting and mutually respecting people, and this in itself has a pleasant effect upon the beholder.

As to the appearance of the individual units of a town, little need be said here. It presumably needs no proof that a town of good-looking and well-designed houses and stores and bridges and streets is a better town than one that has not these assets. The limit in seeking these assets is, of course, what the inhabitants jointly and severally can afford to allot to this kind of advantage, in fairness to all the other kinds of advantage which they have to seek. As we have said before, as total budgets get smaller, it is likely that this kind of advantage has less money allotted to it, not only absolutely but relatively within the total amount of the budget. In these cases, it should be borne very firmly in mind that complicated ornament and an effect of richness are not necessary to the achievement of beauty. Simple and organic forms may achieve the highest degree of beauty, as may be seen by comparing the New England farmhouse of 1750 with the scrollwork house of 1870.

As to the effect of unity, the good appearance of the whole town can be attained in a very large measure by the arrangement of physical units which make up the town. It would be quite possible for a town to

produce a strikingly pleasant total effect even though none of the objects in it were of individually striking beauty, provided that these objects were appropriately arranged. This pleasant and unified arrangement would show itself in two ways:

(*a*) Wherever anyone might stand in the town, the view presented to him would be a picture, a visual composition, in which both the masses and the spaces between the masses were in pleasant proportion and where all these proportional relations worked together toward the production of a single pleasant effect. For example, it is obvious that in a town of Georgian brick houses, the introduction of a house reminiscent of Mayan or Cambodian architecture, however transcendantly beautiful it might be in itself, would probably be a detriment to the total effect. This consistency in composition depends not only, as we have said, on the relative shapes and on the relative architectural and other associations, but fully as much on the relative sizes. In other words, compositions within a town often succeed or fail according to their scale. For instance, a residential community of unpretentious five-room houses might be very beautiful, but, if through the street of this residential area there ran a line of tall telegraph poles, the bad effect would, of course, be in part due to the incongruity of the brutally practical with the pleasantly humanized, but it would be due much more to the fact that the size of the poles would dwarf the size of the buildings and make them appear less cozy than ignominious. Furthermore, it is true that the impression of a town which the visitor carries away with him is not merely the mental photograph of one view but rather the composite picture of many views. The pleasure in the view before the eye depends partly upon the memory of the views previously seen, and the pleasure in the total memory of the town depends partly on the consistency and congruity of the different views that have been seen, which, of course, does not mean that all these views should be alike, but only that they should be related to a consistent whole.

In considering the whole town as to its total pleasant unified effect, the designer is very greatly helped by a number of factors which are primarily economic rather than esthetic. The street system for economic reasons should form an intelligently designed net of main highways and major streets and access streets. For economic reasons, there should be a center of the community on which some of these main roads would converge and at which, very probably, the governmental building or buildings and, very possibly, the commercial buildings would be located. The ease and entirety with which such an arrangement can be perceived will certainly add greatly to the pleasure of the man who perceives it

It is natural that to give the town its most striking and pleasant effect greater expenditures would be concentrated in certain chosen places. The most important place of concentration, the focus of the town, may be the "civic center," or it may be a city gateway, an important composition on the edge of the town facing onto a main highway and giving access to residential areas beyond, or it may assume a number of other forms according to the needs of the people and the topographic opportunities. In some cases, it has been a water front and in others, a park.

(*b*) So far as we have spoken of these total compositions in a town in terms of architectural or engineering structures, at any rate in terms of objects obviously made and located by man. There is another form of organization, however, which is quite different but may be just as effective. If a town, not too large and not too densely built, is located amid beautiful natural scenery of hills and dales and streams and trees, the buildings may be adapted to the scenery and to the topography; and the unity which strikes the observer is a unity among the man-made objects, to be sure, but also and particularly, a unity between the man-made objects and the natural scenery, and of the natural scenery itself. This can plainly be the case in a park or in a farming community. Obviously, however, as the houses get bigger and closer together, there comes a point where the natural effect is overborne by the man-made effect; and if beauty is attained, it must be in a form different from what was there before the town was created, as it now has for its elements the appearance and arrangement of the man-made structures. These contrasts are exemplified in the difference between Norris and Yorkship Village or Hilton.

As to the third factor of good appearance, the general appearance of decency and self-respect in a town is only indirectly the result of design. It is largely the result of an attitude of mind on the part of the inhabitants. If they have good living conditions and good working conditions, if they have a feeling that they are part of an organization in which they have a responsibility and of which they can be proud, the appearance of their homes and of the whole city will automatically reflect this state of mind. This is evident at Hopedale, Silvertown, and Chicopee. It is impossible and unnecessary here to disentangle the economic and the esthetic considerations, but one result is obviously the kind of pleasing general appearance which we have just been discussing.

Probably the most valuable single element in creating unity of form and organization in the planned communities has been the consistent use of street tree planting, which sets these communities immediately apart from ordinary developments. It is natural that this unity depends a great deal upon the length of

time which these plantings have had to mature. In this respect, Forest Hills Gardens, Roland Park, Riverside, and Hopedale are exceptional examples of a consistent lay-out and a consistent program. Forest Hills, especially, presents a picture of almost perfect scale and balance of the planting, adapted to the pattern of streets on the one hand and to the disposition of building masses on the other. In the newer communities, the full realization of this element will require a number of years. However, the planting of street trees has been consistently followed in the majority of the communities studied. At Alcoa, the commendable practice of planting trees in the planting strips of streets not yet opened is worth noting. The absence of street trees at Silvertown is one of its greatest defects, especially if the climatic conditions here are considered. On the other hand, overplanting may very often impair the unifying effect which well-planted streets may give. At Indian Hill, with relatively narrow local streets, it is already obvious that the community is too heavily planted even though the the trees are as yet but half matured. The destruction of a satisfying feeling of openness and unity is felt in parts of Radburn after the short period of 8 years.

It is obvious that in all this matter of appearance, the consistency and unity which give reasonable pleasure are the consistency and unity which would be largely dictated in any case by economic reasons, or which at least can be put into a pleasing visual form without diminishing economic values. There is, therefore, no sufficient reason for discouragement as to the possibility of good appearance in a town, even in a town for people of very low income. The ugliness which we perceive in most of our towns is not fundamentally the result of a lack of money; it is the result of lack of intelligent and consistent and continued design.

#### Adherence to the Plan

If any structure or development, while still in an incomplete form, is taken over by an agency different from the one which conceived and began it, there is sure to be some change in its character, and usually considerable loss or distortion in elements which, though clear in the minds of the originators, could not be made wholly clear to their successors. This is especially true of communities where the factors of the design are complicated and not capable of complete statement, and where there are so many competing interests to be reconciled. The community is the more unfortunate in this respect because if it is taken from the hands of a single controlling agency in its incomplete form, it is likely to fall into the hands of a number of agencies or individuals, each more or less independently controlling a particular aspect of its subsequent development, and so to revert to the planless method of development. This type of subsequent change in development is quite different from the systematic change in plan or detail which may be made by a continuous guiding agency over a period of years.

While in the communities studied, departures from the plan are the exception rather than the rule, the evils of change in control or policy are demonstrated at Vandergrift, Boulder City, Overlook Colony, Kingsport, Kapuskasing, and Yorkship Village. A typical example is given in the present status of Vandergrift, Pa. Under the Apollo Iron & Steel Co., the first unit of development (including the business district and extending to the old railroad cut) followed in detail the original plan of 1897. Vandergrift Heights was already in existence at that time. After the change of companies, the original plan became dormant, and the area between the first unit and the heights has grown from each side in a planless manner. The only instance in which the plan was preserved even in a general way is the location of the park, which, however, has lost the original character intended and is now a level playfield instead of the natural ravine proposed to be preserved in the original plan.

The changes which have occurred in the plan of Boulder City are set forth in a typewritten report on "The Plan of Boulder City," by S. R. DeBoer (pp. 9–11):

> The plans of Boulder City were approved by the Department (of the Interior) and were carried out by the engineers of the Reclamation Service. While the plans were followed in a general way, many modifications were made. The general axis of the town was shifted to save grading expense. The result was that the street lines which, on the plan, were carefully oriented in regard to sunlight, are not that way on the ground. Residential blocks were added which are not at all designed according to the principles of city planning and do not fit the ideas of the plan.
>
> There was no control over the location of business houses. The contractors built store buildings and dormitories in a separate part of the city, and by having practically a monopoly on retail business created a business district away from the center of the city. This has made the growth of the city's business district impossible. With the heart of the plan taken out there was only the street skeleton left without any coordination or reason. Until these business buildings are removed after the completion of the work on the dam, the business district of Boulder City cannot amount to much.
>
> Several changes were made in the residential blocks of the city. One change was mentioned in the location of the residences of Government employees. These residential blocks were shifted from a very sightly and high location to the base, and south slope, of the hill on which the water tank is located, a hot and sunny spot.
>
> In the residential areas of the town the blocks were laid out according to the general plan as approved by the Department. In the details of the location of residences, little attention was paid to the plans. The contractor built hundreds of

cheap cottages, which do not at all carry out the ideas of play spaces, interior yards, etc.

The business plazas, however, are followed out to a considerable degree and it will be possible to see in Boulder City to what extent the principle of off-street parking will relieve congestion in a small city. Much was expected of the architectural control embodied in the plans as approved by the Department. Due to the unhappy building of another business district, so far architectural control has amounted to very little.

Overlook Colony is another example of unfortunate departure from plan. The original plan was dropped at the end of the war and subsequent real-estate development has borne little relation to that originally contemplated. In spite of this change of objective and character, a number of plans of the original lay-out have been preserved by one resident, who has given copies to various interested persons on request, with the hope that the original plan might some time materialize.

Kingsport is typical of a plan which has undergone numerous changes and revisions, both in relation to the original scheme within the original tract under the supervision of the improvement company and in areas immediately adjacent by parties with little or no interest in the original objective beyond using it to exploit their own tracts. This is largely due to too rapid growth beyond the anticipated limits.

A comparison of the original plan for Kapuskasing with the present development shows the skeleton of the plan essentially unchanged but the provision of certain uses and the location of various public buildings departing radically from those originally planned. The failure to provide the bridge to the railroad station as originally planned has reversed the area intended for business from the central to the subordinate section of the plan, the main entrance being through the "back door," so to speak. This reversal has further been fixed by the location of permanent public structures, several of which are poorly related to their sites. The adequacy or practicality of the original plan or of the reasons for the subsequent change is not in question here. It is rather an illustration of the original design and purposes of a plan being changed through the exclusion of one principal element (in this case a bridge) and the inclusion of other elements without due consideration of the whole scheme.

The unfortunate results of nonobservance of the details of the original plan by subsequent development in connection with the war housing projects, notably at Yorkship Village, have already been discussed. (See p. 134.)

The following remarks were noted on questionnaire returns in answer to the question, "How does recent development vary from original plan?"

Alcoa, Tenn., Aluminum Co. of America: Very little; some adjustment of streets found necessary.

American Falls, Idaho, United States Bureau of Reclamation: Practically no change, except Idaho Street has been extended through public square.

Chatham Village, Pa., Buhl Foundation: Not at all.

Coral Gables, Fla., supervising architect: Not at all.

Country Club District, Mo., J. C. Nichols Investment Co.: Gradually increasing block lengths.

Eclipse Park, Wis.: No difference.

Erwin, Tenn., Holston Land Co.: None.

Firestone Park, Ohio, Firestone Tire & Rubber Co.: No changes.

Forest Hills Gardens, N. Y., Russell Sage Foundation: Two interior parks converted into "closes." Larger and more expensive dwellings than planned.

Greenway Parks, Tex., J. W. Lindsley & Co.: Same as planned.

Indian Hill, Mass., Indian Hill Co.: No change.

Kaulton, Ala., Kaulton Lumber Co.: Not at all.

Kohler, Wis., Kohler Co.: No change of any consequence. Topography influences layout of each new section.

Laurelhurst, Oreg., Portland City Planning Commission: Deed restrictions have lapsed; since then, a tendency to reduce cost of dwellings.

Longview, Wash., Longview Planning Council: 12,000 existing population; planned for 50,000. Result: Scattered development.

Mariemont, Ohio, Emery Memorial Foundation: Not at all.

Palos Verdes Estates, Calif., Palos Verdes Estates, Inc.: Very little; homes all originally to be owned, now 10 percent rented. Restrictions amendable: recently amended minium cost of building requirement.

Pullman, Ill., Chicago Municipal Librarian: Now almost completely has lost its identity. Just a district in Chicago, centering around the Pullman Co. offices. No planning features apparent now.

Radburn, N. J., City Housing Corporation: It does not vary.

Rancho Sante Fe, Calif., County Planning Commission: Not at all; proceeding in accordance with original plans.

Roland Park, Md., Roland Park Co.: Streets: originally macadam; now concrete. Park strips: reduced in size; original plan called for private parks in rear of blocks, now abandoned. Playground not designed for lower-income groups. Increased lot frontage. Swing from frame to stone houses.

Seneca Heights, N. Y., Olean City Engineer: No difference.

Silvertown, Ga., Goodrich Tire & Rubber Co.: Practically no variation.

St. Francis Wood, Calif., St. Francis Homes Association: Original development maintained.

Torrance, Calif., Chamber of Commerce: Original plan followed closely.

By and large, the provisions as set forth in the original plans of the communities studied have been followed closely by the developers, whether industry, realty, or philanthropy. The more comprehensive and inclusive these plans have been and the more fully they have been carried to their conclusion, in units even if not in whole, the better has been the result. Examples of outstandingly successful planned communities in this respect are Forest Hills Gardens, Chicopee, Roland Park, Hilton, Norris, Radburn, and to a lesser extent, Union Park Gardens, Silvertown (which with the provision of street trees and

street paving, now being laid, will become fully as complete as Chicopee), Hopedale, Indian Hill, Morgan Park, and, to some extent, Cradock and Fairfield. In addition to these, which were visited in the field survey, the following should be mentioned on the basis of observations by other persons: St. Francis Wood, Chatham Village, Country Club District, Kohler, and Torrance. In every case, it is found that either a continuing agency or a subsequent agency sympathetic with the original ideals and objectives of the plan is necessary for a consistent and, therefore, probably more than usually successful realization. It matters little if this agency be industrial, governmental (municipal, State, or Federal), real estate, or philanthropic, if the plan is sound and the execution sympathetic and consistent.

#### The Use of Legal Restrictions

The provision of public or private legal restrictions regulating the physical growth and development or replanning of any community is essentially an attempt to assure a more organized, economical, and rational use of land for the benefit of the community as a whole. Where these restrictions have been applied after the physical plant has been established, they very often form the only protection which prevents individual interests from pursuing their own course without reference to the welfare and interest of one another.

The following remarks from questionnaires regarding the forms of control which cover various planned communities are worth noting:

Alcoa, Tenn., Aluminum Co. of America: No zoning; building code contemplated; only fireproof buildings permitted in business sections designated as "fire districts."

American Falls, Idaho, United States Bureau of Reclamation: "Zoning" (not an ordinance); use in business district; cost of dwellings in residence district. Platting control; 15- to 30-foot setback. Land contract based upon "zoning" scheme.

Arden, Del., Arden trustees: "Zoning" (area).

Atlantic Heights, N. H., mayor of Portsmouth: Zoning (use, height, area); building code.

Coral Gables, Fla., supervising architect: Building code; private deed restrictions, filed with plat.

Country Club District, Kansas City, Mo., J. C. Nichols Investment Co.: Comprehensive deed restrictions, filed with plat and renewable for 25-year periods. Zoning: (use) two-family, (area) 6,000 square feet—Homes Association.

Erwin, Tenn., Holston Land Co.: Private deed restrictions.

Firestone Park, Ohio, City Planning Commission: Zoning (use, area); platting control—Akron, Ohio.

Forest Hills Gardens, N. Y., Russell Sage Foundation: Zoning (use, height, area) of New York City; building code of New York City; deed covenant.

Greenway Parks, Tex., J. W. Lindsley & Co.: Private deed restrictions; submission of house plans; restrictions filed with plat in Dallas County.

Hopedale, Mass., planner: Zoning (privately held); private deed restrictions.

Indian Hill, Mass., Indian Hill Co.: Building code of Worcester (outside fire district); private deed restrictions (not filed with plat); general building ordinances.

Janesville, including Overlook Heights, Wis., Modern Housing Corporation: City and State building code; zoning (1st residential district) height 45 feet; area not over 60 percent of lot nor closer than 15 feet of street, 8 feet of side lot lines, 10 feet of rear lot line.

Kohler, Wis., Kohler Co.: Zoning; private deed restrictions (use).

Laurelhurst, Portland, Oreg., City Planning Commission: Zoning: one-family; building code; private deed restrictions (one-family, white only); some filed with plat; others with deed.

Lawrence Farms, N. Y., New Castle Planning Board: Zoning: residential area: private restrictions; plans must be approved by developer.

Longview, Wash., planning council: No zoning ordinance has been passed; maximum population controlled by private restrictions in lieu of zoning. Private deed restrictions filed with plat. Ordinary building code.

Marcus Hook, Pa., planners: Proprietary control by company.

Mariemont, Ohio, Emery Memorial Foundation: Zoning: 25-foot set-back and 16 feet free space between structures; Ohio building code; land and deed restrictions filed with plat.

Morgan Park, Minn., Morgan Park Co.: Zoning (Duluth): use, height, area; building code; Morgan Park Co. private deed restrictions, filed with city.

Norris, Tenn., Tennessee Valley Authority: Proprietary control. Tennessee Valley Authority.

Palos Verdes Estates, Calif., Palos Verdes Estates: All private restrictions; housing code; Los Angeles County Building Code; filed by declaration after plat and included by reference in deed. Comprehensive zoning regulations: light and air, yard, courts, set-back requirements (similar to Roland Park). Permanent art jury and community maintenance association.

Radburn, N. J., City Housing Corporation: Municipal zoning system; building code (Borough of Fairlawn); comprehensive deed restrictions, filed with plat.

Rancho Santa Fe, Calif., county planning board and Santa Fe Land Improvement Co.: County zoning ordinance; art jury; protective covenant (until 1973) which is recorded; county building code. Protective restrictions adopted by property owners (Rancho Santa Fe Association). This cooperative corporation has right to enforce restrictions, levy assessments, etc.

River Oaks, Tex., River Oaks Corporation: No zoning in height; building code; private deed restrictions, filed with plat.

Roland Park, Md., Roland Park Co.: Zoning (use, height, area); building code; comprehensive deed restrictions filed with plat.

Seneca Heights, N. Y., Olean city engineer: No municipal zoning: a building code; building-line restriction for single dwellings in deed.

Shaker Heights, Ohio, planner: Municipal zoning; platting control, private deed restrictions; proprietary control by Van Sweringen Co.

Silvertown, Ga., Goodrich Tire & Rubber Co.: Proprietary control.

St. Francis Wood, Calif., St. Francis Homes Association: Private deed restrictions—St. Francis Homes Association enforces restrictions governing the property. Funds for maintenance of recreation areas raised through annual assessment charge.

Torrance, Calif., chamber of commerce: Zoning; building code; restriction as to type of building.

Westinghouse Village, Pa., township commissioners: Zoning; building code; private deed restrictions.

Westover, Mass., Westover Corporation: Zoning; building code; private deed restrictions, filed with plat.

Yorkship Village, N. J., United States Shipping Board: Private deed restrictions; building code.

Zion, Ill., city clerk: Zoning (use, height, area); building code; private restrictions (1,100-year lease).

The value of municipal zoning and building codes and of private deed restrictions in protecting and promoting more coordinated use of land is well established in the minds of developers, public officials, and the courts in relation to the character of population and the development, the resulting stability of use and values, and benefits to health and general welfare.

*The Physical Plan as Compared with Legal Restrictions.*—It would seem obvious that legal restrictions can only go part way in creating these benefits and that the physical plan upon which the restrictions are based should contribute its full share in maintaining the integrity of the development. However, the value of physical arrangement of the plan to meet the conditions of stability of use and value through specific forms for each specific use has not always been utilized to the best advantage. The reason for this may lie in the reluctance with which the developer applies upon the ground a form he feels may prevent a change at any point to some use more remunerative to him. If, however, consideration is given to the lowering of adjacent values by such a change, the loss to the community will practically always more than offset the gain to the individual.

However, planning for specific use by physical methods is not intended entirely to prevent all change. It is essential that the amount and proportions of uses in a town change with the need of the town. The purpose of planning is not to stop this change but to cause it to take place with the minimum of friction due to (1) juxtaposition of uses more or less mutually depreciating, and (2) obsolescence of physical provisions before their physical deterioration. In the past, in unplanned communities, changes have taken place by small and scattered units, thereby causing a maximum of peripheral friction. Moreover, the same area has gone through a rapid succession of changes, thereby destroying construction still physically useful; for example, the change of high-class residence to low-class residence and then to business. In contradistinction, planning contemplates such changes as the orderly growth of business into areas first devoted to other uses only where and when this growth is actually needed and where it will entail a maximum of additions to value with a minimum of destruction to existing value.

Various physical forms which planned communities have utilized in planning for and stabilizing specific use have been previously discussed in connection with form and arrangement, retention of identity, and obsolescence.

The value of the physical plan in preserving the qualities sought may be judged by observing planned areas where restrictions in one form or another have been inadequate or lacking and where the physical plan has had to stand alone. Some interesting observations have been made in this respect by Howard K. Menhinick in connection with a visit to Riverside, Ill.:[2]

* * * in 1869 there was an attempt to erect a private house on Long Common and * * * Mr. Olmsted wrote a letter of protest. This protest was evidently a success, for no house was ever built upon Long Common nor is one likely to be built there in the near future. Only recently when a party composed of outside interests, aiming at political control of the village, declared at a public meeting that they hoped before the end of another year to see the useless Long Common cut up into building lots and covered with apartments, the townspeople arose in arms and defeated the party by an overwhelming vote.

The winding streets which discourage through traffic and the generous open spaces which preserve the amenities have in the past enabled Riverside to maintain its identity as a village of fine homes against all sorts of undesirable encroachments. The forces which threaten the destruction of the residential values of Riverside are stronger today than they have ever been. A threatening invasion by apartments is one of the dangers. The construction of the splendid Chicago Zoological Gardens at the western boundary of Riverside, across the Desplaines River, will doubtless attract large crowds, and once again Riverside will appreciate its buffers of park land and its generally indirect street system.

* * * Although Riverside has been without the advantages of stringent private-deed restrictions and architectural control, as we know them today, yet the provision of adequate open spaces, the setting of houses well back from the streets among trees and shrubs, and the consequent attraction of people with good taste and community pride, have accomplished much the same result.

It will be noted that, although a solid public opinion has here taken the place of some form of legal restriction, the form of the physical plan has not only been an effective instrument in discouraging undesirable encroachment but has undoubtedly been responsible for creating and perpetuating the public support. Another example of physical stability may be observed in the private "places" in St. Louis. Speaking of them in connection with street traffic, Harry D. Freeman states that:[3]

The well-known private "places" of St. Louis are living examples of residential stability produced largely by prohibiting through traffic. Since horse-and-buggy days, these famous

[2] "Riverside Sixty Years Later," in *Landscape Architecture*, January 1932.

[3] In "Obsolescence in Cities" in *The Planners' Journal*, March-April 1936.

places have made a valiant stand against the forces working to destroy them. Only one—the venerable old Vandeventer Place, off Grand Avenue in the center of obsolescent St. Louis—has succumbed completely after generations.

One of the two entrances to the single, boulevard-type street in each of these places is kept open for local traffic. Thus, seclusion from traffic and noise is accomplished by *physical* means. The traffic evil cannot be legislated or contracted out of existence; it must be physically planned or replanned out.

In cases where both planning and restrictions have been comprehensively incorporated, the only indication of the effectiveness of the physical plan in preserving the integrity of its purpose is in the history of application of pressure for change in various parts of a community. It has been seen that the pressures exerted for a change of use at Forest Hills Gardens have not been on the culs-de-sac or the narrow curved residential streets, but at points where the specific use desired has not been so clearly reflected in the physical arrangement.

It must be concluded from the experiences in the communities studied that more than one form of protection is not only desirable but necessary. The articulated plan by its nature cannot make every part of its organization wholly immune from the pressure of nonconforming use and outside influence any more than the convertible plan can make every part satisfactory for every use. Each factor of protection, however, has its own particular qualities which can, if comprehensively organized, mutually make up for the limitations and increase the strength of the other.

### Community Government

The communities founded by industry included in this study have been placed under a variety of forms and stages of control and regulation. The main types are: the private company town in which a more or less autocratic and benevolent form of government exists; the incorporated company town which, while operating as a municipality through publically elected officials, is nevertheless dominated by the policies of the company; the company town which has passed through these transition stages to a town or city no longer influenced by company control; the war housing towns, under county, city, or their own municipal government; other governmentally developed communities which are essentially like "company towns," and the independent incorporated diversified industrial city.

In those communities founded by reality or philanthropic interests, different but no less effective forms of control are to be found, such as the realty company acting as an administrative head of a newly formed community, the appointed association filling the same capacity as a municipal administration, the citizens association with elected officers, and the incorporated town functioning in the usual municipal manner.

Representative communities of the type now incorporated as municipalities are listed below, with their form of government indicated:

Alcoa, Tenn., city manager and council.
American Falls, Idaho, mayor and council.
Coral Gables, Fla., commission form.
Fairfield, Ala., mayor and council.
Kingsport, Tenn., city manager and council.
Longview, Wash., mayor and council.
Ludlow, Mass., mayor and council.
Noreg (Brooklawn), N. J., mayor and council.
Silvertown, Ga., mayor and council.
Torrance, Calif., council of five members.
Vandergrift, Pa., mayor and council.

Additional incorporated communities among those studied are Hopedale, Mass.; Shaker Heights, Ohio; Zion, Ill.; Columbus, Ky.; Midland, Pa.; and Riverside, Ill.

While the form of government which a community may adopt may seem at first thought to be but indirectly related to the physical plan, it is upon this government that the administration, maintenance, and successful operation of the town, represented by the physical plan as well as the population, depends. Certain features possible and even desirable in a company town, or one rented from a single agency, may be out of place and even objectionable in a community operating under a municipal government, to which the land in public ownership is entrusted. The small areas of public land in front of house groups have been pointed out as a source of dissatisfaction at Brooklawn and Yorkship. The street and alley arrangement at Westfield, Ala., rather unique and entirely successful for that type of community under company control and supervision, would hardly be adapted to maintenance by a municipal government. There are certain definite disadvantages to the interior park or playground, either in public ownership or as private easements, or to the type of interior block arrangement found at Morgan Park, Chatham Village, or Whitinsville, or to the group garage as at Hopedale and Chicopee, except where there is some proprietary authority or owners' association to hold the title and assume the administration and maintenance.

Thus, it is important to the planner to have some assurance, or at least an outline, of the administrative pattern expected to be followed by the founding agency before he can recommend any form of physical plan. Many of the schemes of group housing and cooperative living, while in themselves entirely sound, economical, feasible, and desirable, are questionable if we try to incorporate them with our usual forms of municipal government. This alone, however, is not a sufficient reason for denying the need and desirability of every new form of community pattern. It has already been pointed out that such developments as

Radburn, Forest Hills Gardens, and Roland Park have been outstandingly successful in providing through home associations for a community life within a larger corporate area, and others like Chatham Village and Morgan Park through rental by a single agency. Considering the former as representative of the higher income groups of home owners and the latter of the medium and lower income groups of renters, it seems entirely feasible to form our communities, not necessarily in completely segregated units but as distinct groupings in a larger municipal unit, each being an integral part of such larger administrative area, yet each with an entity and individuality of its own, caring for its own needs beyond the point where the larger unit ceases to function efficiently.

### The Realization of Objectives of Planned Communities

Without any attempt to create by a list of "testimonials" a false impression with regard to the success of those planned communities studied in obtaining the objectives desired, for failures are often to be found, the following remarks may be noted from the questionnaires and field survey, relating to the success or failures of these communities with regard to living and working conditions, physical arrangement of the plan, stability of land use and values, lower labor and population turn-over, and a more contented population.

Alcoa, Tenn., Aluminum Co. of America: Living conditions are good. Housing is comfortable and adequate. Shade trees have been set out on all streets. 60 percent of the houses are on streets paved with concrete, and the remainder of streets are hard surfaced. 140 acres of park lands have been set aside. Large swimming pool of 900,000-gallon capacity has been built and is operated by the city. White and colored residents live in separate sections of the city. This plan has proven very satisfactory and has worked to the advantage of both races. Working conditions are very good. Plant buildings are large and airy, all of modern fireproof construction, and practically all are within walking distance of the homes of Alcoa residents. Land values fluctuate very little, due to the stability of employment conditions. Due to a strict adherence to the city plan, the stability of land use continues to follow an even curve.

American Falls, Idaho, United States Bureau of Reclamation: Business development: due to financial depression and other reasons, town has grown little. Anticipate increase in demand for property with prosperity.

Atlantic Heights, N. H., Mayor: Preplanning, decided benefit. Maintained strictly as residential; values static; low rents maintained.

Chicopee, Ga., Chicopee Mfg. Co.: Living and working conditions improved.

Coral Gables, Fla., supervising architect: Cost restrictions, set-backs, etc., included in deeds and strictly adhered to.

Country Club district, Mo., J. C. Nichols Investment Co.: Business development: 8 neighborhood shopping centers. Physical arrangement of plan: curved streets related to main arteries. Stability of land use and values: restrictions enforced by homes association. Population turn-over, very small. Financed its own way.

Eclipse Park, Wis., city planning commission: High class of occupants for industrial town; stability of land use and values, good.

Erwin, Tenn., Holston Land Co.: Good living conditions, physical arrangement of plan, and stability of land use; *no* business development; fair stability of land values; 10 percent population turn-over; industrial aid (objective).

Fairfield, Ala., Tennessee Coal, Iron & Railroad Co., department of sanitation and welfare: Labor turn-over for last 6 years in Tennessee Coal, Iron & Railroad Co. less than 0.7 of 1 percent.

Firestone Park, Ohio, Firestone Tire & Rubber Co.: Land values don't fluctuate rapidly; no changes in land use; working conditions improved.

Forest Hills Gardens, N. Y., Russell Sage Foundation: Preplanning fashioned harmonious design; land use, stable, as well as property values (maintained by gardens corporation of home owners). Attracted high-class residents. Population turn-over, less than 5 percent annually.

Goodyear Heights, Akron, Ohio, Goodyear Heights Realty Co.: Success in regard to element of low down payment, and avoidance of mill type of village.

Greenway Parks, Tex., J. W. Lindsley & Co.: Population turn-over, almost none; original objective attained in private park area and expecting profit.

Hilton, Va., Newport News Land Corporation, subsidiary of Shipbuilding Co.: 250 homes vacant when taken over by company in 1924. Now all homes filled, with a waiting list.

Indian Hill, Mass., Indian Hill Co., subsidiary of the Norton Co.: Success, in all particulars. Physical arrangement: on basis of experience would make no change. Financial: small loss resulting from maintenance of certain public services, and in effort to avoid a profit.

Kaulton, Ala., Kaul Lumber Co.: Success: higher type of labor, reduced turn-over, contentment of worker.

Kohler, Wis., Kohler Co.: Success, in all particulars. Increment retained by home owner.

Laurelhurst, Oreg., Portland City Planning Commission: Character of development maintained by deed restrictions and zoning; stability of land use and property values maintained, not allowing for present depressed market. Better the district, greater the fall in value.

Lawrence Farms, N. Y., New Castle Planning Board: High-class character maintained through restrictions.

Longview, Wash., Longview Planning Council: Effectiveness of physical plan. Good. However, as Longview was designed for 50,000 population, present state of development makes the police and fire departments expensive and practically prohibits any expenditure on parks. This has resulted from considerable areas within the city being undeveloped and homes on the whole, well scattered. Has resulted, by being so scattered in being rather an expensive city to administer. Heavy investments in power lines, water mains, pavements, and sidewalks for only one-fourth of the planned population.

Mariemont, Ohio, Emery Memorial Foundation.: Land values; constantly increasing; land use cannot be affected by encroachment of factories and limitation of shops through zoning in land contract. Population turn-over, 6 percent. Physical arrangement makes one lot as good as another.

Morgan Park, Minn., Morgan Park Co.: Land and buildings, depreciation 50 percent; low maintenance cost due to concrete construction.

North Plymouth, Mass., Plymouth Cordage Co.: Housing plan, successful 25 years ago. Raised standards in community and of employees.

Palos Verdes Estates, Calif., Palos Verdes Estates, Inc.: Planned for and has achieved permanence as high-class residential suburb.

Radburn, N. J., city housing corporation: Living conditions and physical arrangement of plan, definitely satisfactory; business development, retarded because of depression; stability of land use, permanent, due to restrictions; stability of land values, problematical, due to economic conditions; 6 percent vacancies at present.

Rancho Santa Fe, Calif., San Diego County Planning Commission: Preplanning has controlled all factors except property values upset by noncontrollable economic conditions. High-class living conditions; retention of increment by various owners; no population turn-over; original objective of residential and horticultural (citrus fruit) development achieved; good stability of land use.

Roland Park, Md., Roland Park Co.: Development successful beyond usual by reason of value and ability to meet competition, due to restrictions (use and social requirements) as early as 1890, carefully administered by company, and insistence on well-designed houses. Business development, limited. Winding roads, park areas, and landscape plan have been of value. 10 percent vacancies in growing development, now less than 1 percent.

Seneca Heights, N. Y., Olean city engineer: Preplanning established stability of land use and property values and type of occupancy.

Shaker Heights, Ohio, planner: Success, due to rigid deed and building restrictions, zoning, and excellent municipal administration.

South Manchester, Conn., Cheney Silk Mills: Policy of housing employees has well proven itself in lower turn-over, neighborhood and social life. Rents on a par with rest of town. Avoidance of mill village.

Torrance, Calif., chamber of commerce: Living conditions: ideal climatically; working conditions, excellent; protective zoning for industrial occupancy attracted nonspeculative ownership of lands; industries stabilized land values; zoning assured freedom from industrial nuisances; negligible turn-over of labor; increasing industrial employment. Successful, since it was planned for industry. Steady incomes.

Vandergrift, Pa., mayor: Present company realizing benefits of farsightedness of Apollo Iron & Steel Co.—more contentment and stability of population.

Westinghouse Village, Pa., Tinicum Township Commissioners: Success, due to type of population and housing.

From the above remarks and other data noted throughout this study, and after making due allowance for the exceptions in each case, the following facts would appear to stand out:

1. That the industries entering upon a program of developing a community according to a carefully considered plan are doing so for purely business reasons, that they consider it is "good business" to do so and that, in general, they have been justified in their belief.

2. That the war housing developments have made a very real and successful contribution to the field of community planning not only for the immediate population but as examples from which much can be learned.

3. That real-estate agencies of the sounder type have begun to appreciate the values inherent in the "community plan" as a profit-making venture.

4. That philanthropic agencies, willing to work on a narrower margin than the real-estate developer, have contributed something very valuable to progress in this field which no other agency could give.

5. That the persons living in these communities in general are securing better living conditions and community life than those living in the ordinary type of development at the same scale of expenditure, and that they are generally themselves convinced that this is a fact.

## Past and Present Driving Forces and Future Policies

In closing our discussion of planned communities, it seems desirable to return to the factors which have caused them and the objectives which they were intended to realize.

Briefly, industry desired to locate near raw materials, to draw and hold an adequate labor supply both quantitatively and qualitatively, to lower labor turnover by providing facilities for family life, to remove itself, if possible, from the undue dominance of labor agitation in an existing community, to escape undue competition for labor, high land values, high taxes, and resulting high operating costs. The benefits achieved as well as the pitfalls under this policy with relation to the town and its people have been pointed out.

In the communities founded by governmental agencies, we have seen the successful realization of communities founded for war emergency but providing for a permanent population after the war. This realization has been, like most of the company towns, the result of a form of subsidy on the part of the founding agency. In the one instance, the subsidy was justified by emergency war conditions, in the other, by anticipated and realized benefits to both industry and employees.

The communities founded by real estate interests have in general been successes or failures as communities and financially according to the soundness of the principles upon which they were conceived and executed.

The communities founded by philanthropic agencies have given us excellent case studies in community planning. They have, in general, attracted a higher income group than originally anticipated. This would indicate two things—their desirability and the need for similar developments to satisfy an evident demand for a better type of living.

It seems unlikely that the objectives of industry, government, real estate, and philanthropy will, under nor-

mal conditions, change greatly from those of the past. Indications that these policies are continuing at present are to be found in the comparatively recent development of the company towns of Chicopee and Silvertown, in the Government towns of Boulder City, Norris, and the "Greenbelts," in the philanthropic project of Chatham Village, and in the recently platted realty project of Grandyle Village at Grand Island, Erie County, N. Y. If the policies now being followed by the Federal Government continue or if the policy of decentralized industry should develop more markedly than at present, it is inevitable that new communities, either separate or contigous to existing urban centers, will take place. The upward swing in realty development has already started. If the planned community in the various forms in which we have found it in this study has offered advantages not to be found elsewhere, it seems reasonable that future growth can follow even better patterns to the mutual advantage of the founding agency and the prospective inhabitants. It has been the essential purpose of this study to present the experiences which existing planned communities have encountered successfully or unsuccessfully in the past. In this connection, the following general observation based on this study may be made.

There is a distinct need to organize areas in terms of community units, not blocks and lots, each unit carrying with it its own facilities for residence, business, schools, and recreation, and possibly industry, modified according to its location in a metropolitan, rural, or wholly isolated region.

The idea of the cellular city or the neighborhood as a community unit is, of course, not new, and its advantages within practical limits are being increasingly realized as filling certain economic requirements which our present orthodox form of layout sadly lacks. Here again, attention should be called to the close relationship which exists between the type of community presented in this study and the neighborhood or community unit so well set forth by Robert Whitten, Clarence Perry, Thomas Adams, and others. They have made a contribution to economical administration of government as well as to a better form of living. This form of organization is not an unnatural tendency, as is seen in the communities studied and in others that have grown up on either side of the transit or transportation lines of railroads, highways, or water courses. What is needed is better definition and direction of growth. The unit of growth and change in a community should not be merely the lot or the block. Neither are self-sufficient, neither can be multiplied indefinitely into larger units without comprehensive organization, both have a high degree of peripheral friction and thus affect or are affected by the nonconforming and incongruous uses of their neighbors. Stability may be obtained, however, through the use of the community unit which is to a sufficient degree self-protecting and self-contained, and can thus be added to a larger urban area with a minimum of marginal friction and disturbance of the functions of existing uses and facilities. The stability thus obtained will avoid wasteful change within the unit, while undue rigidity will be avoided because future adjacent units can be adapted within themselves to changing conditions. Thus, we may conceive of the community either as a distinct and separate entity as we have found it in the separate towns discussed in the study, or as a homogeneous unit integrated with others of its kind into an urban or metropolitan area, its size depending on the prevailing densities designed for it, its individuality upon the type and income of the population for which it is planned, its unity secured by relegating business and through traffic to the borders instead of the center of the unit, and its community solidarity based upon the educational, recreational, and religious life as its focal culmination. Of the many lessons learned from a study of planned communities, this concept of the neighborhood unit is easily the most important.

# SELECTED BIBLIOGRAPHY[1]

## General References


ABERCROMBIE, PATRICK. Town and country planning. London, Thornton Butterworth, Ltd., 1933. 255 p., illus., diagrs. (The Home University Library of Modern Knowledge.)

ADAMS, THOMAS. The design of residential areas: basic considerations, principles, and methods. Cambridge, Harvard University Press, 1934. 296 p., illus., maps, plans, diagrs., cross sections, tables, charts. (Harvard City Planning Studies, VI.)

———, AND OTHERS. Planning of new towns. (*In* Recent advances in town planning, by Thomas Adams, in collaboration with F. Longstreth Thompson, E. Maxwell Fry, James W. R. Adams, New York, The Macmillan Co., 1932, p. 156–163, plans.)

ALDRIDGE, HENRY R. The case for town planning; a practical manual for the use of councillors, officers, and others engaged in the preparation of town planning schemes; with an appendix by Frank M. Elgood, and Edmund R. Abbott. London, National Housing and Town Planning Council, n. d. 679 p., maps, plans, cross sections, tables (one folded).

ATTERBURY, GROSVENOR. Model towns in America. (Scribner's Magazine, July 1912; vol. 52, No. 1, p. 20–35, illus., diagrs.)

CALKINS, MARION CLINCH. Colonization projects in Wisconsin. (Survey, January 1, 1921; vol. 45, p. 480–485, illus.)

CHICANOT, E. L. Canadian lumber cities. (Garden Cities and Town Planning, March 1925; vol. 15, p. 57–62, illus.)

COMMITTEE ON TOWN PLANNING OF THE AMERICAN INSTITUTE OF ARCHITECTS, *comp.* City planning progress in the United States, 1917. Edited by George B. Ford, assisted by Ralph F. Warner. Washington, Journal of the American Institute of Architects, The Octagon, [1917]. 207 p., illus., maps, plans. Notes on new towns *passim.*

COMMUNITY PLANNING for peacetime industries. (City Plan, April 1918; vol. 3, No. 4, p. 1–6, plan.)

COVE, GEORGE. Community values in government housing. (American City, January 1920; vol. 22, p. 1–7, illus., plan.)

CREAMER, DANIEL B. Is industry decentralizing? A statistical analysis of locational changes in manufacturing employment, 1899–1933. With a preface by Carter Goodrich. Philadelphia, University of Pennsylvania Press, 1935. 105 p., map, tables. (University of Pennsylvania. Wharton School of Finance and Commerce. Industrial Research Department. Study of Population Redistribution. Bulletin No. 3.)

Dayton's "Homestead unit no. 1" is a significant housing experiment. A $2,500,000 loan is sought. And Dodge City gets $155,000. (Architectural Forum, July 1933; vol. 59, p. 78–79, map, portrait.)

DRAPER, E. S. Southern textile village planning. (Landscape Architecture, October 1927; vol. 18, p. 1–28, illus., plans.)

DREIER, JOHN. Greenbelt planning. Resettlement Administration goes to town. (Pencil Points, August 1936; vol. 17, p. 401–419, illus., maps, plans, cross sections.)


[1] Compiled in the Library of the Department of Regional Planning Harvard University, by Katherine McNamara, Librarian, to accompany this monograph.


GOODRICH, CARTER, AND OTHERS. The Government's communities. (*In* their Migration and economic opportunity; the report of the Study of Population Redistribution, Philadelphia, University of Pennsylvania Press, 1936, p. 638–659, map, tables.)

GREENBELT TOWNS. (Architectural Record, September 1936; vol. 80, p. 215–234., illus., map, plans.) Greenbelt, Md., Greenhills, Ohio, Greendale, Wis., Greenbrook, N. J.

HAVERFIELD, F. Ancient town planning. Oxford, Clarendon Press, 1913. 152 p., illus., maps, plans (one folded).

HAYLER, GUY WILFRID. Town-planning actualities. Some recently executed improvement schemes in American small towns. (American Review of Reviews, December 1920; vol. 62, p. 633–637, illus., map.) *Also reprinted.*

HOBBS, W. E. Planning new towns in northern Manitoba. (Journal of the Town Planning Institute of Canada, August-October 1929; vol. 8, p. 77–80.)

HUNTINGTON, C. W. Enclaves of single tax, being a compendium of the legal documents involved, together with historical description. Harvard, Mass., Fiske Warren, 1921 and later annual volumes. Later volumes entitled, Enclaves of economic rent.

INDUSTRIAL VILLAGES in America. (Garden City, July, August 1906; [new series], vol. 1, p. 142, 149–150.)

KNOWLES, MORRIS. Industrial housing; with discussion of accompanying activities: such as town planning, street systems, development of utility services, and related engineering and construction features. New York, McGraw-Hill Book Co., Inc., 1920. 408 p. illus., maps, plans, diagrs., cross sections, tables, charts.

MAGNUSSON, LEIFUR. Housing by employers in the United States. Washington, Govt. Printing Office, 1920. 283 p. illus., maps, plans, tables. (U. S. Bureau of Labor Statistics. Bulletin No. 263; Miscellaneous Series.)

MEAKIN, BUDGETT. Model factories and villages: ideal conditions of labour and housing. London, T. Fisher Unwin, 1905. 480 p. illus., plans.

NOLEN, JOHN. Industrial village communities in the United States. (Garden Cities and Town Planning, January 1921; vol. 11, p. 6–9. illus.)

——— List of low-cost housing developments in the United States. (*In* his More houses for Bridgeport; report to the Chamber of Commerce, Bridgeport, Conn., Cambridge, Mass., August 1916, p. 47–57. illus., plan.)

——— New towns for old. Achievements in civic improvements in some American small towns and neighborhoods. Boston, Marshall Jones Co., 1927. 177 p. illus., plans, cross sections.

——— New towns versus existing cities. (City Planning, April 1926; vol. 2, p. 69–78, illus., maps.)

PRESIDENT'S CONFERENCE ON HOME BUILDING AND HOME OWNERSHIP. Industrial decentralization and housing. (*In* its [Final reports], 1932; vol. 3, p. 174–203. illus., tables; with appendices, p. 204–233.)

——— Subdivision lay-out. (*In* its [Final reports], 1932; vol. 1, p. 47–124. illus., plans, diagrs., cross sections, tables, charts.)

SOUTHERN PINE ASSOCIATION, *pub.* Homes for workmen; a presentation of leading examples of industrial community development. New Orleans, La., The Association, 1919. 250 p. illus., plans, cross sections.

SUBSISTENCE HOMESTEADS for industrial and rural workers at the end of 1934. (Monthly Labor Review, January 1935; vol. 40, p. 19–37. illus., plans, tables.)

TAYLOR, GRAHAM ROMEYN. Satellite cities; a study of industrial suburbs. New York, D. Appleton and Company, 1915. 333 p. illus., maps, diagrs. (National Municipal League Series.)

THOMPSON, F. LONGSTRETH. Site planning in practice; an investigation of the principles of housing estate development. With a foreword by Raymond Unwin. London, Henry Frowde and Hodder and Stoughton, 1923. 257 p. illus., maps, plans, diagr., cross sections, tables. (Oxford Technical Publications.)

U. S. COAL COMMISSION. Report of the United States Coal Commission on the bituminous-mine workers and their homes. (In its Report, Washington, Government Printing Office, 1925, p. 1411–1602. illus. [part folded], tables, charts.)

U. S. DEPARTMENT OF LABOR. BUREAU OF INDUSTRIAL HOUSING AND TRANSPORTATION. War emergency construction (housing war workers). Report of the United States Housing Corporation. Volume II, Houses, site-planning, utilities. Edited by Henry V. Hubbard. Washington Government Printing Office, 1919. 524 p. illus., maps, plans, cross sections.

U. S. RESETTLEMENT ADMINISTRATION. Greenbelt towns: a demonstration in suburban planning. Basic program. Washington, The Administration, September 1936. 33 p. illus., maps, plans, charts.

U. S. SHIPPING BOARD. PASSENGER TRANSPORTATION AND HOUSING DIVISION. Housing the shipbuilders; constructed during the war under the direction of United States Shipping Board * * *. Philadelphia, Pa., 1920. 57 p. illus., plans.

WAUGH, FRANK A. A comparison of town plans. (Landscape Architecture, July 1921; vol. 11, p. 161–166. maps.)

WHITTEN, ROBERT, AND THOMAS ADAMS. Neighborhoods of small homes; economic density of low-cost housing in America and England. Cambridge, Harvard University Press, 1931. 205 p. illus., maps, plans, diagrs., cross sections, tables, charts. (Harvard City Planning Studies, III.)

WOOD, EDITH ELMER. The housing of the unskilled wage earner: America's next problem. New York, The Macmillan Co., 1919. 321 p. (American Social Progress Series.)

———. Recent trends in American housing. New York, The Macmillan Co., 1931. 317 p. illus., tables.

## References to Individual Towns

**Alcoa, Tenn.**

EWALD, ROBERT F. Plan for industrial community of Alcoa, Tennessee. Aluminum and lumber companies occupy central area, with low lands for park areas forming five breaks, seven main thoroughfares and whole street system adjusted to contours. (Engineering News-Record, February 28, 1924; vol. 92, p. 364–367. illus., plan.)

**Allwood, N. J.**

WARNER, RALPH F. Allwood: an American "garden village" near Passaic, N. J. (Architectural Review [Boston], February 1918; vol. 6 [old series, vol. 23], p. 21–24. illus., plans, tables.)

**American Falls, Idaho**

BLACK, RUSSELL VAN NEST. The new American Falls, Idaho, a town reborn. (American City, March 1922; vol. 26, p. 254–257. plan.)

**Arden, New Castle County, Del.**

GARVIN, FLORENCE. Arden: a social experiment. (American City, town and county ed., July 1916; vol. 15, p. 23–26. illus.)

HUNTINGTON, CHARLES WHITE. Arden. (*In* his Enclaves of single tax, being a compendium of the legal documents involved, together with a historical description, Harvard, Mass., Fiske Warren, 1921, p. 35–37, plan, tables.) *See also* later volumes of Enclaves.

**Arvida, Quebec, Canada**

WAKE, H. R. Building the city of Arvida; the general planning, construction methods, and details of materials and equipment used. (Engineering Journal, November 1926; vol. 9, p. 461–464. illus.)

**Atascadero, Calif.**

AMERICAN INSTITUTE OF ARCHITECTS. COMMITTEE ON TOWN PLANNING, *comp.* Atascadero, California. (*In* its City planning progress in the United States, 1917, Washington, Journal of the American Institute of Architects, [1917], p. 8–9. illus.)

CHENEY, CHARLES H. A rural development. (Housing Betterment, November 1922; vol. 11, p. 359–360.)

**Atlantic Heights, Portsmouth, N. H.**

THE FIRST war emergency government towns: III, Atlantic Heights. (Journal of the American Institute of Architects, September 1918; vol. 6, p. 427–434. illus., plans, cross sections.)

GREELEY, WILLIAM ROGER. Portsmouth and the war. Notes on the development at Atlantic Heights, N. H. Kilham and Hopkins, architects and town planners; Lockwood, Greene and Co., engineers. (American Architect, Oct. 16, 1918; vol. 114, p. 447–456. illus., plans, cross sections.)

KILHAM, WALTER H. Recent government housing developments: Atlantic Heights at Portsmouth, N. H. (*In* National Conference on Housing. Housing problems in America, New York, National Housing Association, 1918, p. 94–100.)

**Audubon Village, Amherst, N. Y.**

NUSSBAUMER, NEWELL L. Audubon Village adapts the Radburn plan; another community where children will not have to cross automobile highways when going to school. (American City, April 1929; vol. 40, No. 4, p. 140–142. plans.)

**Billerica, Mass.**

BILLERICA GARDEN SUBURB, INC. [Prospectus.] Billerica, The Author [1914]. [8] p. illus., plans.

COMEY, ARTHUR C. Billerica Garden Suburb. (Landscape Architecture, July 1914; vol. 4, p. 145–149. illus., plans.)

**Biltmore, N. C.**

MEAKIN, BUDGETT. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 409–410. illus.)

**Boulder City, Nev.**

BOULDER CITY, to house the builders of Hoover Dam, a modern city, completely designed at the start to meet the conditions of topography, climate and use. (Public

Works, September 1931; vol. 62. No. 9, p. 27, 68, 70. plan.)

BUILDING Boulder City. Colorado River water now available; sewer system well advanced; administration buildings started; six companies complete housing facilities for 1,200 men and 308 small houses; street work under way. (Engineering News-record, November 26, 1931; vol. 107, p. 846–849. illus., plan.)

DE BOER, S. R. Boulder City: the proposed model town near the Hoover Dam. (American City, February 1931; vol. 44, No. 2, p. 146–149. plans.)

———. The city plan of Boulder City. (National Municipal Review, May 1931; vol. 20, p. 253–255. plan.)

**Bristol, Pa.**

TAYLOR, C. STANLEY, Bristol, America's greatest single industrial housing development. (American Architect, May 15, 1918; vol. 113, p. 599–615. illus., plans.)

**British Columbia University Endowment Lands, Canada**

BUCKLEY, ALFRED. Planning the British Columbia University Endowment Lands; a great town planning scheme for western Canada. (Journal of the Town Planning Institute of Canada, December 1926; vol 5, No. 6, p. 2–4.)

MCPHERSON, H. L. The planning of the University Endowment Lands, Vancouver, British Columbia. (Journal of the Town Planning Institute of Canada, December 1926; vol. 5, No. 6, p. 5–18. illus., map, plans.)

**Brooklawn, N. J., *see* Noreg Village, N. J.**

**Buckman Village, Chester, Pa.**

BUCKMAN, VILLAGE: U. S. Shipping Board housing development at Chester, Pa. G. Edwin Brumbaugh and Simon and Bassett, architects. (Architectural Forum, May 1920; vol. 32, p. 183–188. illus., plans.)

**Camden, N. J. Fairview Section, *see* Yorkship Village, Camden, N. J.**

**Chickasaw, Ala.**

UNITED STATES STEEL CORPORATION. The housing development for the Chickasaw Shipbuilding Co. at Chickasaw, Alabama. (*In* its Bulletin No. 7, December 1918. New York, Bureau of Safety, Sanitation and Welfare, 1918, p. 83–85. illus., plan.)

**Chicopee, Ga.**

DRAPER, E. S. Southern textile village planning. (Landscape Architecture, October 1927; vol. 18, p. 1–28. illus., plans.)

**Clarkdale and Jerome, Ariz.**

MORROW, IRVING F. Two town planning projects in Arizona; Herding and Boyd, architects. (Architect and Engineer, December 1920; vol. 63, No. 3, p. 47–87. illus., maps, plans, cross sections.)

**Coconut Grove, Fla.**

BRIGHT, JOHN IRWIN. Housing and community planning: the plan for Coconut Grove. (Journal of the American Institute of Architects, April 1921; vol. 9, p. 110–127. illus., maps, plans, tables.)

WHITAKER, CHARLES HARRIS. A new tale of two cities. (Freeman, March 9, 1921; vol. 2, p. 610–612.)

**Columbus, Ky.**

SHERIDAN, LAWRENCE V. Columbus, Kentucky, changes its base. (*In* American Civic Association, Inc. American civic annual, 1929, p. 238–241. map.)



**Coral Gables, Fla.**

BEACH, REX. The miracle of Coral Gables. Coral Gables, Fla., 1926. 62 p. illus.

CORAL GABLES, Florida. (National Real Estate Journal, December 28, 1925; vol. 26, No. 26, p. 40–45. illus.)

MERRICK, GEORGE E. Coral Gables, Miami's master suburb. Miami, Fla., [George E. Merrick], 1923. 46 p. illus. *See also* other pamphlet publications about Coral Gables.

MONFORD, REID, and E. FRIEDMAN. Street work in Coral Gables. Paved with bituminous macadam, using coral rock. Sidewalks and parking. Storm sewers, water supply, garbage disposal, street lighting. (Public Works, February-March 1926; vol. 57, p. 51–53. illus., cross sections.)

PRICE, MATLACK. Coral Gables, Miami; a story of vision and achievement. (Arts and Decoration, January 1925; vol. 22, No. 3, p. 3–18. illus.)

**Cradock, Va.**

U. S. DEPARTMENT OF LABOR. BUREAU OF INDUSTRIAL HOUSING AND TRANSPORTATION. Cradock, Va. (Project No. 150a) (*In* its Report to the United States Housing Corporation. Volume II, Houses, site-planning, utilities, Washington, Government Printing Office, 1919, p. 272–278, 285. plans, cross sections.)

**Dawson, Colo.**

BLACK, RUSSELL VAN NEST. The planning of a new town, the example of Dawson, Colo. (American City, April 1920; vol. 22, p. 383–386. illus., plan.) *Also reprinted* as American City Pamphlet, No. 191.

**A Detroit suburb, Mich.**

AUGUR, TRACY B. Adaptation of Radburn, N. J., idea proposed for Detroit suburb. (American City, November 1931; vol. 45, No. 5, p. 83. plan.)

**East Valley Forge, Pa.**

EAST VALLEY FORGE: a transplanted town. (American City, town and county ed., January 1920; vol. 22, p. 14. plan.)

**East Youngstown, Ohio**

HERDING, F. J. Workingmen's colony, East Youngstown. (American Architect, October 2, 1918; vol. 114, p. 383–398. illus., plans, cross sections.) *Also reprinted.*

**Eaton Rapids, Mich.**

DESIGN for Veterans of Foreign Wars community near Eaton Rapids, Michigan. (American Landscape Architect, October 1929; vol. 1, No. 4, p. 38–39. plan.)

**Eclipse Park, Beloit, Wis.**

VEILLER, LAWRENCE. Industrial housing developments in America. I, Beloit, Wis., Eclipse Park; a development by George B. Post and Sons, architects and town planners. (Architectural Record, March 1918; vol. 43, p. 231–256. illus., plans, cross sections.) *Also reprinted* as National Housing Association Publication, No. 46.

**Erwin, Tenn.**

VEILLER, LAWRENCE. Industrial housing developments in America. Part IV, A colony in the Blue Ridge Mountains at Erwin, Tenn. Grosvenor Atterbury, architect and town planner. (Architectural Record, June 1918; vol. 43, p. 547–559. illus., plans, cross sections.)

**Fairfield, Ala.**

MILLER, GEORGE H. Fairfield, a town with a purpose; an industrial community planned to increase the efficiency of labor by promoting health, comfort, and a wholesome civic spirit. (American City, September 1913; vol. 9, p. 213–219. illus., plan, cross sections.) *Reprinted* in part *in* National Property Owner, September 1920.

STARK, C. J. Steel Corporation's industrial community development, with particular reference to the creation of Fairfield, Ala. *Reprinted from* Iron Trade Review, January 1, 1914; 10 p. illus., plans.

**Fairhope, Ala.**

HUNTINGTON, CHARLES WHITE. Fairhope town planning scheme. (*In* his Enclaves of single tax, being a compendium of the legal documents involved, together with a historical description, Harvard, Mass., Fiske Warren, 1921, p. 15b–34. plan.) *See also* later volumes of Enclaves.

MONTOLIU, C. Fairhope: a single-tax colony; a plan for its organic development. (Garden Cities and Town Planning, July 1921; vol. 11, p. 162–166. illus., plan.)

———. Fairhope: a town-planning scheme for its development into an organic city. (American City, April 1921; vol. 24, p. 355–359. plan.)

**Fairview Section, Camden, N. J., *see* Yorkship Village, Camden, N. J.**

**Farm City, N. C., *see* Pender Farm City, N. C. (now Penderlea Homesteads)**

**Firestone Park, Ohio**

FIRESTONE, H. S. Firestone Park, Akron, Ohio, a splendidly conceived housing development of the Firestone Tire and Rubber Company. (*In* Southern Pine Association, *pub.* Homes for workmen, a presentation of leading examples of industrial community development, New Orleans, La., The Association, 1919, p. 199–202. illus., plans.)

**Forest Hills Gardens, Long Island, N Y.**

HOWE, SAMUEL. Forest Hills Gardens. (American Architect, October 30, 1912; vol. 102, p. 153–157. illus. plan.)

———. Town planning on a large scale. (House Beautiful, October 1914; vol. 36, p. 129–136. illus.)

KNEVELS, MARY EASTWOOD. What the suburban-dweller may learn from a model town. (American Homes and Gardens, February 1915; vol. 12, p. 39–45. illus., plans.)

SAGE FOUNDATION HOMES CO. Forest Hills Gardens: the suburban land development of the Russell Sage Foundation. New York, The Company, 1912. 22 p. illus., plan. (Pamphlet No. 1.) *See also* other pamphlet publications of the Company.

——— The Forest Hills Gardens Development: its restrictions, and the powers of the membership corporation which enforces them. (*In* Regional Plan of New York and Its Environs. Regional survey of New York and its environs, 1929; vol. 7, Monograph I, Appendix B, p. 132–140.)

**Gary, Ind.**

HAIG, ROBERT MURRAY. The unearned increment in Gary. New York, Academy of Political Science, 1917, p. 80–94. tables. *Reprinted from* Political Science Quarterly, March 1917.

**Goodyear Heights, Akron, Ohio**

AMERICAN INSTITUTE OF ARCHITECTS. COMMITTEE ON TOWN PLANNING, *comp.* Akron, Ohio. (*In* its City planning progress in the United States, 1917, Washington, Journal of the American Institute of Architects [1917], p. 5. illus.)

GOODYEAR TIRE AND RUBBER CO. Goodyear Heights, second development. Preliminary information and general description of houses with terms of sale. Akron, Ohio, The Company, n. d. unp. illus., plans (one folded), tables.

**Greenbrook, N. J.**

MAYER, ALBERT. A technique for planning complete communities. (Architectural Forum, January, February 1937; vol. 66, p. 19–36, 126–146. illus., maps, plans, diagrs., tables, charts.) *See also* general references above to Greenbelt towns.

**Greendale, Wis.**

CRANE, JACOB. Greendale: the general plan. (Planners' Journal, July–August 1937; vol. 3, p. 89–90.) Paper presented at Milwaukee meeting of American City Planning Institute. *See also* general references above to Greenbelt towns.

**Greenway Parks, Dallas, Tex.**

BACKYARDS and alleys eliminated in this subdivision of "two-front" lots. (National Real Estate Journal, April 2, 1928; vol. 29, No. 5, p. 60–63. illus., plans.)

THE OBSOLETE back yard. (Housing, September 1928; vol. 17, p. 204.)

**Hackensack Meadows, N. J.**

ADAMS, THOMAS, AND OTHERS. Plan of Hackensack Meadows. (*In* Regional Plan of New York and Its Environs. The building of the city, New York, Regional Plan of New York and Its Environs, 1931, p. 540–547, illus.) *Summarized in* American City, July 1928, p. 120.

PROPOSED INDUSTRIAL city; reclamation of meadows near New York urged to provide site for model metropolis of half a million people. (National Real Estate Journal, March 30, 1931; vol. 32, No. 7, p. 42–43. illus., map.)

**Happy Valley, Tenn.**

A GARDEN CITY in America. (Housing, March 1929; vol. 18, p. 75–77.)

NOLEN, JOHN. Regional planning of Happy Valley, Tenn. (City Planning, July 1928; vol. 4, p. 199–205. illus., map.)

**Hershey, Pa.**

SNAVELY, J. R. The industrial community development of Hershey, Pa. (American Landscape Architect, November 1930; vol. 3, No. 5, p. 24–36. illus.)

STODDART, ALEXANDER, AND J. HORACE MCFARLAND. Pennsylvania's chocolate town. (Planning and Civic Comment, April–June 1937; vol. 3, No. 2, p. 9–11. illus. [between p. 20–21.].)

**Hilton, Va.**

GOVERNMENT INDUSTRIAL housing a business proposition. (American Architect, August 7, 1918; vol. 114, p. 157–166. illus., plans, tables.)

HUBBARD, HENRY V. Some preliminary considerations in government industrial war housing. (Landscape Architecture, July 1918; vol. 8, p. 157–168. plans, cross sections, tables.)

———, AND FRANCIS Y. JOANNES. The first war emergency government towns. II, Hilton, Virginia. (Journal of the American Institute of Architects, July 1918; vol. 6, p. 333–345. illus., plans, tables.)

**Hopedale, Mass.**

ALVORD, JAMES CHURCH. What the neighbors did in Hopedale. (Country Life in America, January 1914; vol. 25, No. 3 p. 61–62. 80, 82, 84. illus.)

BROWN, FRANK CHOUTEAU. Workmen's housing at Hopedale, Mass. (Architectural Review [Boston], April 1916; vol. 4 [old series, vol. 21], p. 64–67. illus., plans.)

MEAKIN, BUDGETT. Hopedale. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 404–409. illus., plans.)

SMITH, PAUL R. An instance of practical and esthetic industrial housing. (American City, town and county ed., December 1915; vol. 13, p. 474–476. illus., plans.)

**Indian Hill, Worcester, Mass.**

AMERICAN INSTITUTE OF ARCHITECTS. COMMITTEE ON TOWN PLANNING, *comp.* Worcester, Massachusetts. (*In* its City planning progress in the United States, 1917, Washington, Journal of the American Institute of Architects, [1917], p. 190–191. illus., plan.)

INDIAN HILL: an ideal village. Worcester, [The Norton Co.], n. d. unp. illus., plans.

MAY, CHARLES C. Indian Hill, an industrial Village at Worcester, Mass. Grosvenor Atterbury, town planner and architect. (Architectural Record, January 1917; vol. 41, p. 21–35. illus., plans.) *Also reprinted.* Substantially same *in* Southern Pine Association, *pub.* Homes for workmen, 1919.

**Jerome, Ariz., *see* Clarkdale and Jerome, Ariz.**

**Kansas City, Mo., Country Club District**

BEAUTY PAYS. How one man proved it. (Housing, March 1929; vol. 18, p. 29–32.)

FIRST-PRIZE plan for new subdivision in Country Club District, Kansas City, Mo. A. W. Hertz, N. L. Wilkinson, and R. E. Crans, associated architects. Architectural Record, June 1925; vol. 57, p. 571–573. illus., plan.) Competition conducted by J. C. Nichols Development Co.

NICHOLS, J. C. The Country Club District; the 1,000 acres restricted. [Kansas City, Mo.], The Author, n. d. unp. illus. *See also* other pamphlet publications of the J. C. Nichols Co.

**Kapuskasing, Ontario, Canada**

CANADA. BUREAU OF MUNICIPAL AFFAIRS. Town planning: town of Kapuskasing. (*In* its Report re housing for 1921, including town planning of the town of Kapuskasing, Toronto, The Bureau, 1922, p. 7–14.)

ELLIS, J. A. Development of a new town in Canada. (American City, May 1924; vol. 30, No. 5, p. 541–542. illus., plan.)

HALL, ALFRED V. Considerations in the lay-out of the town of Kapuskasing. (Journal of the Town Planning Institute, June 1922; vol. 1, No. 10, p. 5–12.)

**Kaulton, Ala.**

MILLER, GEORGE H. Kaulton, Ala.: a Southern Pine Manufacturing town built along model lines. (*In* Southern Pine Association, *pub.* Homes for workmen: a presentation of leading examples of industrial community development, New Orleans, La., The Association, 1919, p. 9–16. illus., plans.)

**Kincaid, Ill.**

LUCE, A. T. Kincaid, Ill.: a model mining town. (American City, town and county ed., July 1915; vol. 13, p. 10–13. illus., map.)

**Kingsport, Tenn.**

HUGHES, FRANCES MARY. Where planned beauty blossoms in an industrial community. (American City, December 1930; vol. 43, No. 6, p. 140–141. illus.)

KINGSPORT, TENN. ROTARY CLUB. Kingsport, Tenn., city of industries, schools, churches, homes. Kingsport, The Club, 1937. 234 p. illus., maps.

KIWANIS INTERNATIONAL. Kingsport, Tenn.: the model industrial city. Kingsport, Tenn., [The Author], n. d. 16 p. illus.

MACKENZIE, CLINTON. New factor enters into planning and execution of homes for industrial workers. (*In* his Industrial housing, New York, The Knickerbocker Press, 1920, p. 2–42. illus., plans.)

NOLEN, JOHN. An industrial city built to order: Kingsport, Tenn. (*In* his New towns for old; achievements in civic improvement in some American small towns and neighborhoods, Boston, Marshal Jones Co., 1927, p. 50–65. illus., map, cross sections.)

SHUMAN, ISAAC. Kingsport, an unusual city, built to make business for a railroad; how vision backed by science is creating a model community in the Tennessee mountains. (American City, May 1920; vol. 22, p. 471–473. illus.)

**Kipawa, Quebec, Canada, *see* Temiskaming, Quebec, Canada**

**Kistler, Pa.**

MULVIHILL, FRANK J. Kistler Industrial Village. (Wildwood Magazine, autumn, 1916; vol. 3, No. 3, p. 32–33. 40. illus.)

NOLEN, JOHN. A village for factory workers: Kistler, Pa. (*In* his New towns for old; achievements in civic improvement in some American small towns and neighborhoods, Boston, Marshall Jones Co., 1927 p. 66–74. illus., plans.)

**Kohler, Wis.**

KOHLER CO. Kohler Village, a town-planned Wisconsin industrial community American in spirit and government. Kohler, Wis., The Company, 1928. 32 p. illus., plan.

THACKWELL, RHYS G. An industrial village of home owners. (American City, May 1927; vol. 36, p. 669–671. illus., plan.)

THE TOWN of Kohler, Wis.: a model industrial development; Brust and Philipp, architects. (Architecture, April 1925; vol. 51, p. 149–154. illus., plans.)

YOUNG, JAMES C. A model town that grew on a prairie; Kohler's industry is concealed by parks and the homes of its workers. (New York Times Magazine, October 11, 1931, p. 11, 22. illus., portrait.)

**Lawrence Farms, Westchester Co., N. Y.**

LAWRENCE, DUDLEY B. Lawrence Farms in Westchester. (American Landscape Architect, March 1932; vol. 6, No. 3, p. 24–29. illus., plan.)

LAWRENCE FARMS. (Architectural Forum, July 1933; vol. 59, p. 82–83. portrait.)

MASON, ROY. A new village designed to protect country life. (National Real Estate Journal, November 25, 1929; vol. 30, No. 24, p. 17–19. illus., plan.)

PIERSON, RALPH. Town planning for country life protection. (American City, January 1930; vol. 42, No. 1, p. 135–136. illus., plan.)

**Lens, Saskatchewan, Canada**

THE NEW TOWN of Lens, Saskatchewan. (Journal of the Town Planning Institute of Canada, October 1921; vol. 1, No. 6, p. 1–2.)

**Lexington, N. C.**

DRAPER, E. S. Southern textile village planning. (Landscape Architecture, October 1927; vol. 18, p. 1–28. illus., plans.)

**Lomax, Ill.**

U. S. CONGRESS. 64TH. SECOND SESSION. SENATE. SUBCOMMITTEE OF THE COMMITTEE ON AGRICULTURE AND FORESTRY. The new city of Lomax. (*In* its Garden City movement; hearing before the Subcommittee * * *, Washington, Government Printing Office, 1917, p. 29–32.)

**Longview, Wash.**

HARE, S. HERBERT. American small towns: II, Longview, Wash. (Town Planning Review, December 1935; vol. 16, p. 279–286+plates 56–59. illus., map, plan.)

———. The planning of a new industrial city. (American City, November 1923; vol. 29, p. 501–503. illus., plan.)

———. The planning of Jefferson Square at Longview, Wash. (Parks and Recreation, November 1931; vol. 15, p. 116–120. illus., plan, diagr.)

———. The planning of the industrial city of Longview, Wash. (*In* Proceedings of the American Society of Civil Engineers; Aug. 1927; vol. 53, p. 1177–1183. illus.; with discussion, October 1927, p. 2069–2070.) *Also reprinted* from Transactions of the American Society of Civil Engineers as Paper No. 1671.

LAMBUTH, B. L. The planning of Longview, Wash. (Journal of the Town Planning Institute of Canada, August 1927; vol. 6, p. 131–134; with discussion, p. 134–135.)

———. A small city whose growth is aided and controlled by a plan. (American City, August 1926; vol. 35, No. 2, p. 186–191. illus.)

LONGVIEW: a city-planned community. (Architect and Engineer, April 1925; vol. 81, No. 1, p. 99–104. illus.)

LONGVIEW COMPANY. Longview, Wash., the city practical that vision built. Longview, The Company, [1923?]. 40 p. illus., maps (part folded).

**Loveland Farms, Youngstown, Ohio**

COMMUNITY PLANNING for peace-time industries; general plan for Loveland Farms, near Youngstown, Ohio * * *. (American Architect, May 15, 1918; vol. 113, p. 635–638. illus., plans, chart, table.)

KNOWLES, MORRIS. The industrial housing development of Loveland Farms. (*In* Proceedings of the American Society for Municipal Improvements, 1919, p. 363–413. illus., maps [folded], plans [folded], cross sections [part folded], chart, tables.)

**Ludlow, Mass.**

MEAKIN, BUDGETT. Ludlow. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 401–404. illus., plans.)

**Manchester, Conn., *see* South Manchester, Conn.**

**Marcus Hook, Pa.**

BALLINGER AND PERROT. An industrial village. Philadelphia, The Authors, [n. d.]. unp. illus. (one folded), plans.

**Mare Island, Calif.**

U. S. DEPARTMENT OF LABOR. BUREAU OF INDUSTRIAL HOUSING AND TRANSPORTATION. Mare Island Navy Yard (Vallejo), Calif. (Project No. 581.) (*In* its Report of the United States Housing Corporation. Volume II, Houses, site-planning, utilities, Washington, Government Printing Office, 1919, p. 211–221. illus., plans, cross sections.)

**Mariemont, Ohio**

FAY, FREDERIC H. The development of Mariemont, Ohio. (*In* Proceedings of the American Society of Civil Engineers, October 1926; vol. 52, p. 1619–1635. illus., plan, cross sections; with discussion, April 1927; vol. 53, p. 583–585.)

MARIEMONT: a new town; a complete residential village near Cincinnati, Ohio, planned by John Nolen and Philip W. Foster * * *. (Architecture, September 1926; vol. 54, p. 247–274+plates 171–185. illus., plans.)

MARIEMONT, America's demonstration town. (American City, October 1922; vol. 27, p. 309–310. plan, cross sections.)

MARIEMONT CO. Mariemont, the new town: "a national examplar," now under development and construction by the Mariemont Company * * *, Cincinnati, O., The Company, 1925. 63 p. illus., maps, plans, table, chart.

NOLEN, JOHN. A wholesale migration from cities in prospect: Mariemont as an example. (*In* his New towns for old; achievements in civic improvement in some American small towns and neighborhoods, Boston, Marshall Jones Company, 1927, p. 111–132. illus., plans, diagrs., table.)

**Marysville, Mich.**

MODEL INDUSTRIAL town layout at Marysville, Mich. Zoning combined with city planning; site was farm land; public utilities, parks and civic center provided. (Engineering News-record, September 23, 1920; vol. 85, p. 613–614. plan.)

**Midland, Pa.**

THE TOWN of Midland, Pa., a new development in housing near Pittsburgh. Albert H. Spahr, architect, Architectural Review (Boston), February 1916; vol. 4 [old series, vol. 21], p. 33–36. illus., plans.

WRIGHT, J. E., An industrial town That's Fit to Live in (American City, town and county ed., November 1915; vol. 13, p. 388–390. illus.).

**Morgan Park, Duluth, Minn.**

MAGNUSSON, LEIFUR. A modern industrial suburb. (Monthly Review of the U. S. Bureau of Labor Statistics, April 1918; vol. 6, p. 729–753. illus., plans, tables, chart.) *Also reprinted.*

MORGAN PARK, Minn.: an industrial suburb for the Minnesota Steel Company; Dean and Dean, architects. American Architect, June 5, 1918; vol. 113, p. 743–758, 761. illus., plans.

UNITED STATES STEEL CORPORATION. BUREAU OF SAFETY-SANITATION AND WELFARE. Morgan Park. (*In* its Bulletin No. 7, December 1918, p. 67–72. illus., plans.)

**Mossmain, Mont.**

AMERICAN INSTITUTE OF ARCHITECTS. COMMITTEE ON TOWN PLANNING, *comp.* Mossmain, Montana. (*In* its City planning progress in the United States, 1917, Washington, Journal of the American Institute of Architects [1917], p. 106. plan.)

A GARDEN CITY project. (American City, June 1916; vol. 14, p. 633. plan.)

**Muscle Shoals, Ala.**

HAMMITT, J. O. Managing a temporary town. (National Municipal Review, June 1919; vol. 8, p. 311–317.) *Also reprinted.*

WARNER, RALPH F. Muscle Shoals: a new industrial town in Alabama; Ewing and Allen, architects. (Architectural Review [New York], January 1919; vol. 8 [old series, vol. 25], p. 18–20. illus., plans.)

**Myers Park, Charlotte, N. C.**

NOLEN, JOHN. A high-class residential suburb: Myers Park. (*In* his New towns for old; achievements in civic improvement in some American small towns and neighborhoods, Boston, Marshall Jones Co., 1927, p. 100–110. illus., plans, cross sections.)

**Neponset Garden Village, East Walpole, Mass.**

WALPOLE, MASS. TOWN PLANNING COMMITTEE. Report on proposed development for Neponset Garden Village at East Walpole, Mass., April 5, 1915. (*In* its Town planning for small communities, New York, D. Appleton & Co., 1917, p. 173–177 and *passim.*)

**New Holland, N. C.**

AMERICAN INSTITUTE OF ARCHITECTS. COMMITTEE ON TOWN PLANNING, *comp.* New Holland, N. C. (*In* its City planning progress in the United States, 1917, Washington, Journal of the American Institute of Architects, [1917], p. 116–117, plan.)

**Noreg Village, N. J. (now Brooklawn, N. J.)**

GOVE, GEORGE. (*In* his Community values in government housing, American City, January 1920; vol. 22, p. 6–7, illus., p. 4.)

**Norris, Tenn.**

AUGUR, TRACY B. The planning of the town of Norris. (American Architect, April 1936; vol. 148, No. 2644, p. 19–26, illus., map, plans.) *Also reprinted.*

DRAPER, EARLE S. The new T[ennessee] V[alley] A[uthority] town of Norris, Tennessee. (American City, December 1933; vol. 48, No. 12, p. 67–68, illus.)

———. T[ennessee] V[alley] A[uthority] low-cost housing. (*In* National Association of Housing Officials. Housing officials' year book, 1935, Chicago, The Association, 1935, p. 31–36.)

———. T[ennessee] V[alley] A[uthority]'s yardstick for housing is a cinder-block house costing from $2,325 for one story and four rooms to $3,150 for two stories and five rooms. Brick veneer and frame houses, electrically heated and plywood paneled, are alternates at Norris, Tenn. (Architectural Forum, September 1935; vol. 63, p. 162–170, illus., plans.)

GENERAL PLAN for the town of Norris, Tenn., *in* part III of Benchmarks in the Tennessee Valley, by Arthur E. Morgan. (Survey Graphic, May 1934; vol. 23, p. 234, plan.)

**Ojibway, Ontario, Canada**

[COMMITTEE ON NEW INDUSTRIAL TOWNS.] A memorandum to the Steel Corporation; a plan for the conservation of future increments of land values at Ojibway and for conversion of the same into additional revenues for community purposes. [The Committee, 1917.] 19 p.

**Overlook Colony, Claymont, Del.**

OVERLOOK COLONY: a housing development at Claymont, Del. Coffin and Coffin, architects; John Nolen, landscape architect. (Architectural Forum, May 1922; vol. 36, p. 197–200+plates 74–75, illus., plans.)

**Palos Verdes, Calif.**

CHENEY, CHARLES H. Palos Verdes: Eight years of development. (Architect and Engineer, January 1930; vol. 100, No. 1, p. 35–42, illus., plan.)

OLMSTED, FREDERICK LAW. Palos Verdes Estates. (Landscape Architecture, July 1927; vol. 17, p. 255–279. illus., map [folded], plans.)

PALOS VERDES BULLETIN, vol. 1, No. 1, vol. 8, No. 8. Palos Verdes Estates, Calif., Palos Verdes Homes Association, November 1924, May–June 1933. illus.

PALOS VERDES carries its town plan into execution. (American City, December 1925; vol. 33, p. 666–667, 669. illus., plan.)

PALOS VERDES HOMES ASSOCIATION, *pub.* The Palos Verdes protective restrictions; with lists of the declarations and amendments, what tracts they affect, and where they may be found in the Los Angeles County records. Palos Verdes Estates, Calif., The Association, February 1929. 36 p. tables.

**Paruco Park, Jeannette, Pa.**

PENNSYLVANIA RUBBER COMPANY. Paruco Park, a delightful place to live. Jeannette, Pa., The Company, n. d. 17 p. illus., plans.

**Pender Farm City, N. C. (now Penderlea Homesteads)**

ADAMS, THOMAS. Proposed farm city in Pender County, N. C.; report. Ottawa, Canada, The Author, January 1921. 24 p. maps. (Farm Cities Corporation, Publication No. 2.)

FARM CITIES CORPORATION OF AMERICA. [Views upon the Farm City project.] New York, The Corporation, [1922]. 16 p. plan.

GALL, GEORGE H. Making farm life profitable and pleasant; building a farm city * * *. (National Real Estate Journal, May 21, 1923; vol. 24., No. 11, p. 29–32. plan.)

VAN SCHAACK, GORDON. Penderlea Homesteads, the development of a subsistence homesteads project. (Landscape Architecture, January 1935; vol. 25, p. 75–80. illus., map, plan, cross sections.)

**Pine Falls, Manitoba, Canada**

MERTZ, J. P. The planning of Pine Falls, Manitoba: a model industrial town. (Journal of the Town Planning Institute of Canada, June 1929; vol. 8, p. 47–48.)

**Pullman, Ill.**

NIMMONS, GEORGE C. Modern industrial plants. (Architectural Record, November 1918; vol. 44, p. 414–421. illus,. plans.)

TAYLOR, GRAHAM ROMEYN. Rediscovering an employer's Utopia. (*In* his satellite cities; a study of industrial suburbs, New York, D. Appleton & Co., 1915, p. 28–67. illus., plan, table.)

**Radburn, N. J.**

APPLICATION of closed-end street plan at Radburn. (American City, April 1929; vol. 40, No. 4, p. 142. plan.)

ASCHER, CHARLES S. The extra-municipal administration of Radburn: an experiment in government by contract. (National Municipal Review, July 1929; vol. 18, p. 442–446.)

AUGUR, TRACY B. Radburn: the challenge of a new town. (Michigan Municipal Review, February, March 1931; vol. 4, p. 19–22, 30, 39–41. illus., plan.)

Brownlow, Louis. Radburn: a new town planned for the motor age. (International Housing and Town Planning Bulletin, February 1930; No. 21, p. 4–27. illus., plan, table.) Text in English, French, and German.

———. Some problems in new planning. (*In* Proceedings of the National Conference on City Planning, Philadelphia, The Conference, 1929, p. 1–11; with discussion, p. 12–15.) *Also reprinted*, without discussion, as National Conference on City Planning, Bulletin, No. 4.

City Housing Corporation. Annual report, fourth–tenth. New York, The Corporation, 1928–34. illus., plans, tables.

———. Radburn: protective restrictions and community administration. New York, The Corporation, April 15, 1929. 40 p.

———. Radburn garden homes. New York, The Corporation, September 1, 1930. 24 p. illus., map, plans. Also earlier editions.

———. Regarding Radburn; [reprints of 10 editorials]. New York, The Corporation, [1928]. [8] p.

Economy, charm and safety of the cul-de-sac street. Suggestions of great interest to America, from an eminent English town planner. (American City, November, 1928; vol. 39, No. 5, p. 104–106. diagrs.) *See also* comment *in* December 1928 issue.

Hudson, Robert B. Radburn: a plan of living, a study made for the American Association for Adult Education, under the supervision of John O. Walker. New York, American Association for Adult Education, 1934. 118 p. plan, charts, tables.

New York's first satellite town; an interview with Mr. Alexander M. Bing. (National Municipal Review, March, 1928; vol. 17, p. 142–146. illus., plan.) Substantially same *in* American City, February 1928.

Propper, Henry M. Radburn's unique plan shows results. (American City, November 1929; vol. 41, No. 5, p. 142–144. illus.)

**Rancho Santa Fe, Calif.**

Shippey, Lee. An exceptionally planned rural community. (American City, September 1924; vol. 31, p. 232–234. illus., plan.)

**River Oaks, Houston, Tex.**

Riddle, Don. "Homes to last for all time," the story of Houston's River Oaks. (National Real Estate Journal, March 4, 1929; vol. 30, No. 5, p. 21–28. illus., plan, portraits.)

Subdivisions: Homes are still being sold in River Oaks, Houston's nonprofit subdivision. (Architectural Forum, July 1933; vol. 59, p. 82.)

**Riverdale, Rome, N. Y.**

American Institute of Architects. Committee on Town Planning, *comp.* Rome, New York. (*In* its City planning progress in the United States, 1917, Washington, Journal of the American Institute of Architects, [1917] p. 153.)

Standard Buildings, Inc. Riverdale: a village for the employees of the Rome Brass and Copper Co., Rome, N. Y. New York, The Author, 1916. 20 p. illus., map, plans.

**Roland Park, Baltimore, Md.**

A Book of pictures in Roland Park, Baltimore, Maryland, March and June 1911. Baltimore, [The Roland Park Co.], 1912. unp. illus.

Gardens, Houses and People, vol. 1, No. 1, January 1926 to date. Baltimore, Md., The Roland Park Co., January 1926 to date. illus. Title formerly, The Roland Park Company's Magazine.

A Residence Section planned on nature's lines: the laying out of Roland Park, near Baltimore; a citizens' administration existing solely for the care of the property. (American City, August 1913; vol. 9, p. 115–120. illus.)

Roland Park Co. Homeland in the Roland Park-Guilford district. Information for buyers, owners and architects. Baltimore, The Company, October 1924. 24 p. (Pamphlet No. 1.)

**Rosita, Mexico**

Skougor, Hjalmar E. Rosita, Mexico, a carefully planned city; pleasing, comfortable, and hygienic. (Coal Age June 2, 9, 1921; vol. 19, p. 983–987, 1037–1040. illus., plans.)

**San Clemente, Calif.**

Emery, Christine. A new town de luxe. (American City, February 1930; vol. 42, No. 2, p. 118. illus.)

**Sawyer Park, Williamsport, Pa.**

Veiller, Lawrence. Industrial housing developments in America. Part III, A development of group houses, Sawyer Park, Williamsport, Pa. George S. Welsh and Lewis E. Welsh, architects. (Architectural Record, May 1918; vol. 43, p. 447–469. illus., plans, charts, tables.)

**Shaker Heights, Cleveland, Ohio**

Shaker Heights Improvement Co. The Shaker Heights subdivision of S[haker] H[eights]. Cleveland, The Company, 1914. 24 p. illus.

Smith, F. A. Cushing. The glory of Shaker Village: "the heritage of the Shakers"; a remarkable home community development, suburban to Cleveland, that probably surpasses anything of like nature in the United States. (American Landscape Architect, July 1929; vol. 1, No. 1, p. 21–35. illus.)

Van Sweringen Co. The heritage of the Shakers; a vast expanse of nature's land hitherto occupied by a home-abjuring community, now developed, refined and rededicated exclusively to home. Cleveland, The Company, 1923. 47 p. illus.

**South Manchester, Conn.**

Meakin, Budgett. South Manchester. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 397–398.)

**Sparrows Point, Md.**

Meakin, Budgett. Sparrows Point. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 395–397.)

Olmsted, Frederick Law, Jr. Sparrows Point, Md. (*In* National Housing Association. A symposium on war housing, New York, The Association, 1918, p. 135–136.)

Sparrows Point, Md. (Housing Betterment, February 1919; vol. 8, p. 101.)

**Sunnyside, Long Island, N. Y.**

City Housing Corporation. Sunnyside Gardens, a home community. New York, The Corporation, n. d. unp. illus., plan.

City Housing [Corporation] reorganizes. (Survey, September 1934; vol. 70, p. 289.) Comment on financial reorganization.

Ely, Richard T. The City Housing Corporation and "Sunnyside." (Journal of Land and Public Utility Economics, April 1926; vol. 2, p. 172–185. diagrs.)

Emmerich, Herbert. The problem of low-priced cooperative apartments: an experiment at Sunnyside Gardens. (Journal of Land and Public Utility Economics, August 1928; vol. 4, p. 225–234. diagrs., tables.)

TOUGH, ROSALIND. Production costs of urban land in Sunnyside, Long Island; Building costs and total costs at Sunnyside Gardens, Long Island. (Journal of Land and Public Utility Economics, February, May 1932; vol. 8, p. 43–54, 164–174. map, plans, tables, chart.)

**Temiskaming, Quebec, Canada (formerly called Kipawa)**

CANADA. COMMISSION OF CONSERVATION. The town of Kipawa. (*In* its Report of the tenth annual meeting, held at Ottawa, February 17, 1919. Ottawa, The Commission, 1919, p. 110–112. plans [one folded], chart.)

A CANADIAN model industrial town: Temiskaming, Quebec, Canada. (Garden Cities and Town Planning, December 1930; vol. 20, p. 307–308. illus.)

GRIMMER, A. K. The development and operation of a company-owned industrial town. (Engineering Journal, May 1934; vol. 17, p. 219–223. illus., plans.) Paper presented before Ottawa Branch of the Engineering Institute of Canada, October 26, 1933.

PLANNING and building new towns in Canada: Kipawa. (Conservation of Life [Ottawa], January 1919; vol. 5, p. 10–16. plans, chart.)

**Torrance, Calif.**

BARTLETT, DANA W. An industrial garden city: Torrance. (American City, October 1913; vol. 9, p. 310–314. illus., plan.)

TORRANCE (CALIF.) CHAMBER OF COMMERCE. INDUSTRIAL DEPT. General industrial report of Torrence, Calif. Torrance, Calif., The Chamber, May 1933. 24 p. illus., maps (one folded), tables.

**Tyrone, N. M.**

MAGNUSSON, LEIFUR. A modern copper mining town. (Monthly Labor Review, September 1918; vol. 7, p. 754–760. illus., plans, tables.)

THE NEW MINING community of Tyrone, N. M., now building for the Burro Mountain branch of the Phelps Dodge Corporation; Bertram Grosvenor Goodhue, architect. (Architural Review [Boston], April 1918; vol. 6 [old series, vol. 23], p. 59–62+plates 53–56. illus., plans, cross sections.)

**Union Park Gardens, Wilmington, Del.**

NOLEN, JOHN. A war emergency project: Union Park Gardens. (*In* his New towns for old: achievements in civic improvement in some American small towns and neighborhoods, Boston, Marshall Jones Co., 1927, p. 89–99. illus., plans.)

PERROT, EMILE G. Recent government housing developments: Union Park Gardens, Wilmington, Del. (National Conference on Housing. Housing problems in America, New York, National Housing Association, 1918, p. 101–117.)

**Vandergrift, Pa.**

MEAKIN, BUDGETT. Vandergrift. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 393–395. illus.)

**Venice, Sarasota County, Fla.**

NOLEN, JOHN. [Plan and air view of Venice, Fla.] (*In* his New towns for old; achievements in civic improvement in some American small towns and neighborhoods, Boston, Marshall Jones Co., 1927, p. 153. illus. between pp. 154–155.)

———. Recent town planning in Florida; a broad scheme of the American Brotherhood of Locomotive Engineers. (Manufacturers Record, August 12, 1926; vol. 90; No. 6, p. 67–68.)

**Westfield, Ala.**

UNITED STATES STEEL CORPORATION. The housing development for the Fairfield Steel Company at Westfield, Ala. (*In* its Bulletin No. 7, December 1918, New York, Bureau of Safety, Sanitation and Welfare, 1918, p. 77–82. illus., plans.)

**Westover, Norwood, and Westwood, Mass.**

WESTOVER CORPORATION. Westover, a New England village of the twentieth century; a conception that required vision, foresight, courage, and years of working and planning, situated in Norwood and Westwood, Mass. Norwood, Mass., The Corporation, n. d. 17 p. illus., map, plan.

**Whitinsville, Northbridge, Mass.**

MEAKIN, BUDGETT. Whittinsville. (*In* his Model factories and villages: ideal conditions of labour and housing, London, T. Fisher Unwin, 1905, p. 398–400. illus.)

**Williamsburg, Va.**

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. COMMITTEE ON WILLIAMSBURG RESTORATION. Special report of the Committee on Williamsburg restoration, September 1930. (Landscape Architecture, October 1930; vol. 21, p. 60–62.)

CHORLEY, KENNETH. Williamsburg, a new old city. (*In* American Civic Association, Inc. American Civic Annual, 1934, p. 205–207.)

COLONIAL WILLIAMSBURG, INC. Map of the city of Williamsburg, Va. The Author, 1934. map.

OLDS, NATHANIEL S. Williamsburg and its restoration. Privately printed, 1929; 11 p. illus., map.

**Williamsport, Pa.**

MILLENER, WILLIAM S. An industrial village in Williamsport. (American City, July 1917; vol. 17, p. 58–59. illus., plan.)

**Yorkship Village, Camden, N. J. (now known as Fairview Section)**

CHILDS, RICHARD S. The first war emergency government towns for shipyard workers: I, "Yorkship Village," at Camden, N. J. (Journal of the American Institute of Architects, May 1918; vol. 6, p. 249–251.)

CRAWFORD, ANDREW WRIGHT. Yorkship Village: a by-product of the war. (Garden Cities and Town Planning, January 1921; vol. 11, p. 9–12. illus., plan.)

LITCHFIELD, ELECTUS D. The model village that is; the story of Yorkship Village, planned and completed in less than 2 years. (House Beautiful, June 1922; vol. 51, p. 533–536. illus., plan.)

———. Recent Government housing developments: Yorkship Village, Camden, N. J. (*In* National Conference on Housing. Housing problems in America, New York, National Housing Association, 1918, p. 82–93.)

MAY, CHARLES C. Yorkship Village: a development for the New York Shipbuilding Corporation, Camden, N. J. Electus D. Litchfield, architect. (Architectural Forum, June 1918; vol. 28, p. 205–210. illus., plans.)

U. S. SHIPPING BOARD. EMERGENCY FLEET CORPORATION. PASSENGER TRANSPORTATION AND HOUSING DIVISION. [Photos. and plans of Yorkship Village, Camden, N. J.] (*In* its Housing the shipbuilders * * *, Philadelphia, Pa., 1920, p. 5–11. illus., plans.)

WARNER, RALPH F. Yorkship: a new war town for the Emergency Fleet Corporation, near Camden, N. J. (Architectural Review [Boston], June 1918; vol. 6 [old series, vol. 23], p. 91–93. illus., plans, table.)

# PART II
# URBAN LIVING CONDITIONS*

## Contents


| | Page |
|---|---|
| **Introduction** | 164 |
| **Section 1. The Economic Aspect of Housing** | 165 |
| Financial Aspects of Housing Consumption | 165 |
| **Section 2. Physical Characteristics of the Urban Dwelling** | 176 |
| Type of Structure | 176 |
| Size of Dwelling Unit | 179 |
| Materials of Construction | 182 |
| Conveniences | 183 |
| Lighting Facilities | 186 |
| Cooking Facilities | 188 |
| Heating Facilities | 189 |
| Other Conveniences | 192 |
| Physical Condition of Structure | 194 |
| Age | 194 |
| State of Repair | 196 |
| Occupancy and Density | 197 |
| Vacancies | 199 |
| **Section 3. Housing and the Community** | 200 |
| Definition of a Slum | 200 |
| Poor Housing and Health | 201 |
| **Section 4. Housing and Conduct** | 206 |
| Causal Factors Underlying Criminal and Delinquent Activity | 208 |


*Prepared by Louis Wirth and Edward Shils.


## ACKNOWLEDGMENTS

In the preparation of this study, Harper Library of the University of Chicago was especially helpful during the research period. Research aid was rendered by the social science research committee of the University of Chicago.

Clerical assistance was at various times furnished by the National Youth Administration and the Works Progress Administration.

# PART II
# INTRODUCTION

The city may be thought of as having an existence in three intimately connected but theoretically separable spheres: (1) As a unit having a functional position in the larger—regional, national, or world—economy of men, goods, and services; (2) as an integrated social structure or mechanism with its own forms of equilibrium and with its own social and psychological characteristics; and (3) as a physical apparatus, which men use for the attainment of their biological, economic, and cultural ends. The way in which this apparatus is utilized by given individuals and the particular parts of the apparatus which they use depend on their economic and social status, i. e., on the claims which they can effectively exert on others in the form of income and recognition. Certain types of the apparatus are manipulated only by specially qualified persons, as for instance, certain types of machinery, lathes, locomotives, elevators, and trolley cars, while others, such as buildings for work and residence, are, to some degree at least, utilized by everyone who works or lives in the city, either as an individual in his own right or as a member of some organized group such as a corporation or a family.

There is nothing mysterious about the connection between human needs and the picture which our cities present to us of man-made hills and mountains of brick and glass, steel, wood, and concrete, broken by the gullies through which it is possible to move from one part of the city to another.[1] The human use of these buildings is highly specialized and differentiated. The working occupancy of an office building or of a factory obviously depends largely upon the vocation or skill of the occupants. The occupancy, however, of various types and qualities of residential buildings is based mainly on income qualification. Accordingly, the residential physiognomy of the city is highly variegated. Not only are there glaring differences in the physical exterior of the buildings, but almost everything on the inside can be placed in a series which parallels the distribution of income. The pages that follow will attempt to delineate with some detail the exact character of the residential side of the urban physical mechanism in its economic and material aspects. They will seek further to analyze the processes whereby the various strata of urban society undertake to lay claim to their residences, the special obstacles created by the peculiar form which the present economic structure takes under urban conditions, and the various measures which have been promulgated to overcome these obstacles. The consequence of the allocation of given social-economic strata to given types of residences will be examined with special reference to the relationships between certain types of housing conditions and health and social adjustment.

[1] Allowing for the differences caused by skyscrapers, the following characterization of Berlin in 1896 seems quite relevant. "The whole town may be characterized as a tableland of bricks and mortar 72 feet high, cut up by intersecting valleys representing the streets." (Cited by Catherine Bauer, *Modern Housing* (New York, 1934), p. 6.)

# PART II—SECTION 1
# THE ECONOMIC ASPECT OF HOUSING

## Financial Aspects of Housing Consumption

From 1900 to 1930 the ownership of homes in nonfarm areas increased steadily while that of farm homes decreased steadily. Despite these two opposing tendencies, a greater degree of home ownership obtained among farm operators than among city persons and rural nonfarmers, 52.5 percent of farm dwellings being owned by their occupants while only 45.2 percent of nonfarm dwellings are owner-occupied. It is likely that the proportion of owners in each of these areas has decreased since 1930, due to the large number of foreclosures of mortgages. As for the future it seems to be probable that ownership will not increase either in the country or the city. In the case of the latter, the renewed tendency toward multifamily dwellings which is now spreading even into the smaller communities below 10,000 population,[1] the likelihood that Government-financed or Government-sponsored building projects will tend to be of the multifamily variety, the decreased effective demand for housing due to large-scale unemployment, and the disillusionment following on the sorry financing arrangements and subsequent foreclosures at the end of the twenties—all of these considerations make it appear probable that 1930 may have seen the peak of urban home ownership in the history of the United States.[2]

Some impression of the influences of urban existence on home ownership may be derived from table 1. In most of the geographic regions there is an inverse relationship between the median percentage of families owning their own homes and the population size of the city. For the United States as a whole this same relationship holds, with the single exception of cities in the 250,000 to 500,000 group, in which 40 percent own their own homes as compared with 39.32 percent in the next lower size class. This break in the downward slope of home owning which accompanies increasing population is accounted for by the greater number of cities of this size in the East and West North Central and the Pacific regions, which, as a whole, have a much higher home ownership ratio than any of the other regions. The Middle Atlantic States present a certain exception to this generalization, since in the cities of 500,000 and over in this region, there is a higher percentage of home ownership than in most of those below that size. This is due to the inclusion of Philadelphia (with about 50 percent home ownership), Pittsburgh and Buffalo (with about 40 percent each). New York City, the only other city over 500,000 in the Middle Atlantic States, has about 20 percent home ownership. The explanation for the relatively high home ownership ratios of the three former cities may be found to a certain degree in their spatial extensiveness and the consequent possibility of building relatively cheap single-family dwellings. In Philadelphia this is especially the case, since it has the highest ratio of single-family dwelling units of any of the very large cities of the country (approximately 79 percent of Philadelphia's families lived in single-family dwellings in 1930). It is clear that the larger the ratio of single-family dwellings the greater the chances for a high ratio of home ownership.[3]

TABLE 1.—*Percent of families owning their own homes by size of city and geographical division: 1930*

[Cities over 25,000]

| Size of city | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| 25,000 to 50,000 | 49.28 | 43.50 | 50.00 | 55.33 | 53.50 | 38.00 | 39.37 | 42.50 | 39.17 | 51.67 |
| 50,000 to 100,000 | 44.58 | 38.75 | 42.00 | 51.88 | 51.25 | 33.33 | 37.50 | 38.13 | [1] 52.50 | 51.67 |
| 100,000 to 250,000 | 39.32 | 32.50 | 43.75 | 53.75 | 52.50 | 33.75 | 37.50 | 38.75 | [1] 47.50 | 50.00 |
| 250,000 to 500,000 | 40.00 | [1] 32.50 | 27.50 | 43.75 | 47.50 | [2] 38.00 | 37.50 | 36.25 | [1] 42.40 | 48.25 |
| Over 500,000 | 38.75 | [1] 27.50 | 42.50 | 40.00 | [1] 32.50 | [1] 52.50 | ------ | ------ | ------ | [1] 35.00 |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

[1] *The Annalist*, October 1936.

[2] The Real Property Inventory, which surveyed all the dwelling units (2,633,135) in a carefully selected sample of 64 cities, found that only 40 percent were owner-occupied. It is also to the point to cite Carol Aronovici and Elizabeth McCalmont to the effect that "with a constantly shifting center of gravity in industry, trade, and population, with insecurity of employment, present low level of wages, high construction costs, etc., home ownership must be looked upon as an adventure to be indulged in only by a small proportion of our population.

"The Buhl Foundation, an endowed institution, endeavored to ascertain the possibilities for providing decent dwellings for certain white collar income groups. After a careful investigation their conclusion as summarized in their own words was as follows: 'At first the Foundation endeavored to learn if it might be practicable to build free-standing single houses for sale within the reach of the $2,000 to $2,500 a year income class. *The studies indicated clearly that this could not be done.* On the contrary, they led clearly and irresistibly to the conclusion that a more important opportunity could be found in building garden homes for rental, particularly to the $2,200 to $3,000 a year income group. More amenities at lower cost and a far greater degree of social and economic security were found to be possible under a rental than under a home ownership program.'" (*Catching Up with Housing* (Newark, 1936), p. 45). See Part One of this volume, "Planned Communities."

[3] It is relevant here to point out that there is a high inverse relationship between size of city and percent of families dwelling in single-family houses, which provides a certain corroboration of the generalization that large city life tends to discourage home ownership. The same facts appear more strikingly in the following form: 12.1 percent of all families in the United States as a whole live in multifamily dwellings; 4.8 percent of all rural families, 13 percent of all urban families in cities of less than 1,000,000, and 46.3 percent of all families in cities over 1,000,000. (*Vide infra*.)

It is difficult to establish an unambiguous relationship between the degree to which a city is industrialized and the extent of home ownership in that city, even though home buying within a given city is to a certain degree the prerogative of the higher income classes.[4] (Cf. table 2.) Certain of the very slightly industrialized cities are either residential suburbs outside of great metropolitan centers having relatively large numbers of multifamily dwellings and accordingly a lower proportion of home ownership, or in several cases, mining cities with quite poorly paid working populations to which home ownership would not be easily accessible. This is true, however, only of a very limited number of cities over 25,000. In the two top groups of the industrialization scale there is a decided decline in the percentage of home ownership for the United States as a whole, while there is a relatively higher proportion in the moderately industrialized cities as compared with the proportion at either extreme. It is possible that the cities in the middle categories are predominantly moderate-sized cities, many of which are in the East and West North Central States and which tend to cancel out the influence of the very large cities, the occupational composition of which is more closely related to that of the many moderate-sized cities than to that of the smaller number of residential suburbs and small highly industrialized cities. In any case, since income determines the limits of home ownership but does not decide whether those who have adequate incomes will take advantage of their possibilities, it is rather difficult to explain the extent of home ownership by occupational (and, consequently, income) composition of the population without taking into account at the same time city size, regional location, and other factors.

Nonetheless, the fact that such a relationship between economic-social status and home ownership does exist is borne out by table 4. Here the economic status of the inhabitants of a city is represented by the number of income tax returns per 10,000 persons gainfully occupied. On the basis of such an index it is found that on the whole the larger the number of income tax returns (i. e., the larger the number of single persons earning more than $1,000 per annum and of married ones earning $2,500 or more per annum) the larger is the percentage of home ownership. Brookline, Massachusetts, which is a suburb of Boston and which has the highest wealth index of any city in the country, has also a quite small percentage of its families residing in one-family dwellings (38.1 percent). Aside from this one city and a sharp drop in the class reporting $2,600 to $3,099 income-tax returns per 10,000 gainfully occupied, there is a positive relationship between home ownership and ratio of income-tax returns to population gainfully occupied.

Other factors which seem to have some relevance are the rate of population growth in the decade 1920 to 1930, and the age of the city. An increasing population (cf. table 5) is with some qualifications more closely related to high home-ownership rates than a decreasing one. Such a relationship may obtain from a variety of causes of which the following may be the most significant. A rapidly increasing population places a strain on the existing supply of available shelter facilities, consequently sending rentals upward and creating a shortage. Out of the necessity of obtaining some security of shelter and to avert the threat of increasing rents which always accompanies a shortage, it is usually most practicable to attempt to buy a home which offers some protection against increases in charges which seem certain to occur in the impending future.[5] However, very

TABLE 2.—*Median percent of families owning their own homes, by degree of industrialization and geographic division: 1930*

| Percent gainfully occupied in manufacturing and mechanical industries | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| 5.00 to 14.99 | 32.50 | [1]32.50 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| 15.00 to 24.99 | 42.19 | 45.00 | 43.75 | 55.00 | 51.25 | 34.00 | 36.25 | 42.50 | 38.75 | 50.83 |
| 25.00 to 34.99 | 43.61 | 51.88 | 42.50 | 51.88 | 51.67 | 35.00 | 36.88 | 37.91 | 45.00 | 48.13 |
| 35.00 to 44.99 | 46.25 | 37.50 | 43.00 | 55.25 | 53.33 | 38.75 | 43.33 | ------ | [1]52.50 | 61.25 |
| 45.00 to 54.99 | 49.55 | 42.50 | 48.50 | 52.27 | ------ | [2]30.00 | ------ | [1]37.50 | ------ | ------ |
| 55.00 to 64.99 | 46.25 | 37.50 | 50.00 | 55.00 | ------ | [1]42.50 | ------ | ------ | ------ | ------ |
| 65.00 to 74.99 | 40.00 | [2]25.00 | [2]45.00 | [2]40.00 | ------ | ------ | ------ | ------ | ------ | ------ |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, and *Occupations*, vol. IV, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

TABLE 3.—*Number and percent of home owners and tenants in dwellings of equated values and rentals: 1930* [1]

| Owned nonfarm homes, value | Rented nonfarm homes, rental | Owned nonfarm homes | | Rented nonfarm homes | |
|---|---|---|---|---|---|
| | | Number | Percent | Number | Percent |
| Under $1,000 | Under $10 | 794,724 | 7.6 | 1,563,952 | 12.7 |
| $1,000 to $1,499 | $10 to $14 | 570,047 | 5.4 | 1,330,927 | 10.8 |
| $1,500 to $1,999 | $15 to $19 | 531,277 | 5.1 | 1,302,397 | 10.5 |
| $2,000 to $2,999 | $20 to $29 | 1,167,325 | 11.1 | 2,545,208 | 20.6 |
| $3,000 to $4,999 | $30 to $49 | 2,343,769 | 22.3 | 3,191,435 | 25.8 |
| $5,000 to $7,499 | $50 to $74 | 2,297,029 | 21.9 | 1,503,401 | 12.2 |
| $7,500 to $9,999 | $75 to $99 | 989,468 | 9.4 | 343,071 | 2.8 |
| $10,000 to $14,999 | $100 to $149 | 906,557 | 8.6 | 163,292 | 1.3 |
| $15,000 to $19,999 | $150 to $199 | 339,535 | 3.2 | 46,297 | .4 |
| $20,000 and over | $200 and over | 354,337 | 3.4 | 45,750 | .4 |
| Not reported | Not reported | 209,318 | 2.0 | 315,829 | 2.6 |
| Total | | 10,503,136 | 100.0 | 12,351,549 | 100.0 |

[1] Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930*. (Washington: Government Printing Office, 1933), p. 6.

[4] See also table 3, which equates the value of owned homes with monthly rental of rented homes at a ratio of 100:1 and shows a much greater concentration of the owned homes in the upper value groups as contrasted with a concentration at the lower end of the parallel scale for the rented homes. Cf. also Frank Watson, *The Housing Problem in the United States* (New York, 1935).

[5] In the explanation of lower ownership rates at the highest increase rates, we should mention in addition that the cities which grew most rapidly during the decade of the twenties were the cities surrounding great metropolitan centers, where multifamily dwellings have attained especial prominence. In middle-sized cities outside

TABLE 4.—*Median percentage of families owning dwellings, by wealth level of city and geographic division: 1930*

[Cities over 25,000]

| Number of income tax returns per 10,000 gainfully occupied | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 to 599 | 45.00 | 37.50 | 47.50 | 47.50 | 51.67 | 28.75 | 37.50 | [1]47.50 | ------ | 52.50 |
| 600 to 1,099 | 45.31 | 38.50 | 44.50 | 51.96 | 53.33 | 34.72 | 38.75 | 40.00 | [2]52.50 | 57.50 |
| 1,100 to 1,599 | 46.38 | 40.00 | 45.00 | 56.39 | 45.00 | 45.00 | [2]40.00 | 37.50 | 40.00 | 46.00 |
| 1,600 to 2,099 | 50.00 | ------ | 42.50 | 52.50 | ------ | ------ | ------ | ------ | ------ | 51.25 |
| 2,100 to 2,599 | 51.67 | [1]52.50 | [1]52.50 | ------ | [1]52.50 | [1]37.50 | ------ | ------ | ------ | ------ |
| 2,600 to 3,099 | 45.00 | ------ | 42.50 | [1]47.50 | ------ | ------ | ------ | ------ | ------ | ------ |
| 3,100 to 3,599 | 55.00 | [1]62.50 | ------ | 52.50 | ------ | ------ | ------ | ------ | ------ | ------ |
| 3,600 to 4,099 | 32.50 | [1]32.50 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |

[1] 1 city

[2] 2 cities.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States* (Washington: Government Printing Office, 1933), and Bureau of Internal Revenue, *Statistics of Income for 1930* (Washington: Government Printing Office, 1932).

large increases in population tend to place such a premium on shelter facilities and give such a stimulus to real-estate speculation that the consequent rise in the expenditures necessary for home ownership renders it almost prohibitive. Conversely, cities which are losing in population are usually losing in attractiveness for one reason or another, most frequently because of decreasing economic opportunities or because greater opportunities exist in some nearby place. For these reasons mobility may seem desirable, and since home ownership, through the difficulty in disposing of homes, interferes with mobility, it is a privilege which is likely to be foregone.

It is difficult to determine the age of a city if age is regarded as the equivalent of the length of the period when the city began to approximate its present form, either in population size or economic characteristics. Age as determined by the date when the city first appeared in the census does not seem to provide an adequate basis for generalization. It is nonetheless interesting to note that cities which appeared in the census of population later than 1900 have a higher home ownership rate than cities which were reported for the first time during earlier periods (cf. table 6). This articulates in a crude way with what was said concerning population increase and home ownership, namely, that recency of relatively rapid growth in population is conducive to home ownership. This corroborates also the generalization concerning the negative influence of the size of a city on home ownership, since it is primarily

metropolitan regions, which grew at a much slighter rate, single-family dwellings predominate and with them there is an increase in the likelihood of home ownership (cf. table 3). Note particularly that home ownership in cities between 250,000 and 500,000 does not decrease in accord with the general tendency. Cf. also Coleman Woodbury, *Aportment House Increases and Attitudes towards Home Ownership* (Chicago, 1931), p. 7 and R. D. McKenzie, *The Metropolitan Community* (New York, 1933), pp. 48 and 218.

TABLE 5.—*Median percent of families owning homes (1930) by rate of growth (1920–30)*

[Cities over 25,000]

| Percent increase 1920–30 | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 percent and over | 45.00 | 51.88 | 47.50 | 52.92 | [2]50.00 | 36.67 | 37.50 | 38.21 | 37.50 | 47.50 |
| 30 to 50 percent | 47.50 | 56.25 | 40.00 | 54.17 | 50.00 | 33.75 | 38.33 | 39.17 | ------ | 50.00 |
| 15 to 30 percent | 49.23 | 41.25 | 46.88 | 53.44 | 53.75 | 33.75 | ------ | 32.50 | 50.00 | 51.25 |
| 5 to 15 percent | 45.83 | 35.00 | 44.58 | 53.50 | 51.88 | 36.25 | 38.75 | 42.50 | [2]45.00 | 57.50 |
| 5 to 0 percent | 42.77 | 35.00 | 45.83 | [2]50.00 | [2]45.00 | 30.00 | [1]42.50 | ------ | ------ | ------ |
| 0 to −5 percent | 37.50 | 40.00 | 27.50 | [1]67.50 | ------ | 37.50 | ------ | ------ | [1]37.50 | ------ |
| −5 to −15 percent | 32.50 | 35.00 | [1]12.50 | [2]50.00 | ------ | [2]25.00 | ------ | ------ | ------ | ------ |
| −15 to −30 percent | 32.50 | ------ | ------ | ------ | ------ | [1]37.50 | ------ | ------ | ------ | ------ |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

TABLE 6.—*Percent of families owning their own homes by age of city and geographical division: 1930*

[Cities over 25,000]

| Date of first appearance in the United States census | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| Appeared in census of 1850 | 46.06 | 42.16 | 44.00 | 54.50 | 52.00 | 36.25 | 37.50 | 39.64 | 45.00 | 50.42 |
| Appeared in census of 1900, not 1850 | 43.64 | 34.64 | 46.25 | 52.50 | 51.88 | 35.36 | 39.00 | 36.67 | ------ | ------ |
| Appeared later than 1900 | 51.00 | [2]45.00 | [1]52.50 | 55.00 | [2]52.50 | ------ | ------ | 47.50 | ------ | [2]50.00 |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

the smaller satellite cities which grew at the higher rates during the 1920–30 period and which have also appeared most recently in the census.

The extent of home ownership depends not only on the price of land, materials, and labor, but also on the possibilities of financing the purchase of a home. The person who buys a home can only in extremely rare cases pay in full for his purchase. What usually occurs, although no precise figures are available, is that the purchaser applies no more than 20 to 30 percent of the total cost of the home out of his own funds. In order to make up the difference he must borrow the remainder either from an individual who has a surplus or from agencies which specialize in supplying funds for this purpose.

The Real Property Inventory found that 54.03 percent of all owner-occupied single-family homes in the cities studied were mortgaged, ranging all the way from 16.24 percent in Frederick, Md., 17.46 percent in Butte, Mont., and 18.03 percent in Paducah, Ky., to 71.95 percent in Syracuse, N. Y., 74.64 percent in Worcester, Mass., and 76.08 percent in Waterbury, Conn.

TABLE 7.—*Median value of rental of nonfarm homes for United States: 1930*

| | Total | Urban | Rural nonfarm |
|---|---|---|---|
| Median value of owned nonfarm homes | $4,778.00 | $5,743.00 | $2,661.00 |
| Median rental of rented nonfarm homes | 27.15 | 32.06 | 12.01 |

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930*. (Washington: Government Printing Office, 1933), p. 18.

Further data as to the extent to which dwellings are mortgaged may be derived from table 8. In 1934, when the Financial Survey of Urban Housing was made, mortgages constituted between 50 and 60 percent of the total value of the dwellings, the percentage being on the whole larger for higher priced homes. Interesting differences are revealed when the data are broken down by size of city. We then find that the larger the city the larger is the percent of the total value which is covered by mortgage, indicating again the greater difficulty of home ownership in the large cities. When viewed with reference to its relationship to the occupational composition of a city, we find that the larger the percent of persons engaged in manufacturing and mechanical industries, i. e., the larger the proportion of industrial wage earners, the larger is the mortgage burden (table 8).

TABLE 8.—*Percent of total mortgaged dwellings, by specified city size group, geographic division, and degree of industralization*

| | Value | |
|---|---|---|
| | $2,000 to $2,999 [1] | $3,000 to $7,499 [1] |
| City size group: | *Percent* | *Percent* |
| 10,000 to 25,000 | [2] 51.00 | [2] 45.00 |
| 25,000 to 50,000 | 51.00 | 50.00 |
| 50,000 to 100,000 | 47.33 | 52.00 |
| 100,000 to 250,000 | 50.33 | 57.00 |
| 250,000 to 500,000 | 51.50 | 64.50 |
| 500,000 and over | [3] 53.00 | [3] 73.00 |
| Geographic division: | | |
| New England and Middle Atlantic | 58.00 | 68.00 |
| East and West North Central | 50.67 | 60.00 |
| South Atlantic and East and West South Central | 49.00 | 60.50 |
| Mountain and Pacific | 51.00 | 58.00 |
| Percent gainfully occupied in manufacturing and mechanical industries: | | |
| 15.00 to 24.9 | 45.62 | 50.60 |
| 25.00 to 34.9 | 46.25 | 54.16 |
| 35.00 to 44.9 | 58.75 | 69.16 |
| 45.00 to 54.9 | 50.00 | 65.00 |
| 55.00 to 64.9 | 65.00 | 75.00 |

[1] No data for Reno, Nev.; Williamsport, Pa.; Burlington, Vt.; Decatur, Ill.; Albuquerque, N. Mex.; and Knoxville, Tenn.

[2] 2 cities.

[3] 1 city.

Compiled from *Financial Survey of Urban Housing* (mimeographed advanced sheets), Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C.

It should also be noted that the ratio of mortgaged homes is greatest in the New England and Middle Atlantic States which are the most industralized and most urbanized in the country, and which are among the largest home ownership areas. Such a relationship might be used to point out the situations under which home ownership is realized. The obstacles presented by urbanization and its accompanying situations place the urban home owner under a relatively heavy burden.

Another index to the large measure in which home ownership depends on borrowed money is to be found in table 9, which shows that approximately one-sixth of the owner-occupied dwellings covered in the *Financial Survey* are in debt to at least 85 percent of their value, and only a small proportion is relatively free from debt. The heavy burden under which the big city home owner labors is expressed also in the fact that in the two categories showing the highest indebtedness there is a tendency for the incidence of heavy indebtedness to increase with the size of the city, while among those homes which are indebted only 20 to 29 percent of the total value, the big cities have a lower representation than the small ones (cf. tables 9 and 10).

Similar conclusions are to be derived from the relationship between the ratio of debt to value and the occupational composition of cities (cf. tables 9 and 10). The slightly industrialized cities have a greater proportion of low indebtedness than the more heavily industrialized ones. In the case of heaviest indebtedness the least and the most industrialized cities have a smaller representation than the moderately industrialized cities which are in most cases also the larger cities. It should be noted, however, that the heavily industrialized cities (those with larger working-class populations) have a larger proportion of their home owners in the large debt class (85 percent and more) than do the slightly industrialized ones.[6]

Probably the most important factor to be considered in an analysis of the degree to which various types of cities favor home ownership is the price which the purchaser must pay. There are, of course, very great variations within any single community, but our concern here will be to point out the differences existing among cities of various types in respect to the median value of homes owned by their occupants, and to consider some of the probable causes for the differences.

It is in accord with what has been said previously about the greater difficulty of owning a home in the great centers of population that, despite certain irregularities both for individual regions and for the country as a whole, the median value of owner-occupied homes is greater in large cities than in small ones. The reason for the irregularity in the increase by city size for the United States as a whole lies in the fact that an inordi-

[6] What has been said so far concerning the indebtedness situation of owner-occupied homes applies also to rented dwellings.

TABLE 9.—*Percent owner-occupied mortgaged properties by ratio of debt to value, by specified city size groups, geographic division, and degree of industralization*

| | Ratio of debt to value (percent of owner-occupied properties) | | |
|---|---|---|---|
| | 20 to 29 [1] | 50 to 59 [1] | 85+ [1] |
| City size group: | | | |
| 10,000 to 25,000 | [2] 11.50 | [2] 12.50 | [3] 13.00 |
| 25,000 to 50,000 | 11.00 | 13.00 | 14.00 |
| 50,000 to 100,000 | 11.00 | 14.75 | 13.50 |
| 100,000 to 250,000 | 8.17 | 15.13 | 16.25 |
| 250,000 to 500,000 | 8.25 | 15.17 | 15.67 |
| 500,000 and over | [3] 8.50 | [3] 13.50 | [3] 19.00 |
| Geographic division: | | | |
| New England and Middle Atlantic | 8.00 | 15.00 | 15.00 |
| East and West North Central | 10.50 | 15.20 | 13.00 |
| South Atlantic, and East and West South Central | 8.50 | 13.50 | 16.50 |
| Mountain and Pacific | 8.67 | 15.00 | 16.67 |
| Percent gainfully occupied in manufacturing and mechanical industries: | | | |
| 15.00 to 24.9 | 10.80 | 14.50 | 12.80 |
| 25.00 to 34.9 | 10.80 | 15.80 | 15.00 |
| 35.00 to 44.9 | 8.50 | 13.10 | 19.00 |
| 45.00 to 54.9 | 10.00 | 16.00 | 16.00 |
| 55.00 to 64.9 | 7.50 | 16.00 | 16.00 |

[1] No data for Reno, Nev.; Williamsport, Pa.; Burlington, Vt.; Decatur, Ill.; Albuquerque, N. Mex.; and Knoxville, Tenn.
[2] 2 cities.
[3] 1 city.

Compiled from *Financial Survey of Urban Housing* (mimeographed advance sheets), Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C.

TABLE 10.—*Ratio of average debt to average value (percent) in owner occupied homes, by specified city size groups, geographic division, and degree of industralization*

| | *Percent* |
|---|---|
| City size group: | |
| 10,000 to 25,000 | 50.0 |
| 25,000 to 50,000 | 54.0 |
| 50,000 to 100,000 | 57.0 |
| 100,000 to 250,000 | 57.3 |
| 250,000 to 500,000 | 56.5 |
| 500,000 and over | [1] 59.0 |
| Geographic division: | |
| New England and Middle Atlantic | 54.0 |
| East and West North Central | 53.8 |
| South Atlantic, and East and West South Central | 58.0 |
| Mountain and Pacific | 56.0 |
| Percent gainfully occupied in manufacturing and mechanical industries: | |
| 15.00 to 24.9 | 55.0 |
| 25.00 to 34.9 | 55.5 |
| 35.00 to 44.9 | 59.3 |
| 45.00 to 54.9 | 59.7 |
| 55.00 to 64.9 | [2] 58.0 |

[1] 1 city.
[2] 2 cities.

Compiled from *Financial Survey of Urban Housing* (mimeographed advance sheets), Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C.

nately large proportion of the cities between 50,000 and 100,000 are located in the New England, Middle Atlantic, and East North Central States, where the median value of owned homes is definitely higher than it is in other regions (city size being held constant).

Another irregularity difficult to account for is the fact that in the Middle Atlantic region the median value in cities from 250,000 to 500,000 is greater than it is in cities over 500,000. This may very well be connected with the higher ownership rates of three of four Middle Atlantic cities of 500,000 and over (Buffalo, Pittsburgh, and Philadelphia) where, due to peculiarities of topography and original design, the city area is relatively extensive and land values are probably lower than in other cities of the same size, and home ownership is accordingly more easily attained. In any case the general tendency offers support for the hypothesis that urban life in its extreme form discourages home ownership.

Due to the less democratized character of home ownership in the large cities, i. e., the disproportionate concentration of home ownership in the wealthier classes, the owner-occupied homes are very likely to be predominantly in the upper price brackets. In the smaller cities, where home ownership is more accessible to the lower economic strata, there would be a more even distribution. Hence, the median value of owner-occupied homes in the large cities receives an increment which is not to be deduced merely from higher land values, real estate taxes, and associated factors.

In table 11 we see that, for the United States as a whole, the less industrialized communities (those with between 5.0 and 24.00 percent of the gainfully employed working in manufacturing and mechanical industries), which are almost always residential suburbs, have the highest median value for the owner-occupied homes while the highly industrialized cities (those from 55.00 to 74.99 percent) are among the next highest, with the moderately industrialized cities having the lowest median values. The variations are rather slight, and for certain regions indicate an opposite tendency from that which holds for the national total.

Practically all of the highly industrialized cities are located in the New England, Middle Atlantic, East North Central, and West North Central regions, which have very much higher median values than any of the other regions, while the less industrialized cities are from both low and high value regions. If this is discounted we then see that, after the slightly industrialized suburbs in which the wealthier classes reside, the next highest from the point of view of value are the moderately industrialized cities. Since it has been demonstrated that the larger a city, the greater is the proportion of workers in trade, clerical, and professional occupations, it seems evident that the cities in the middle categories are the larger cities. It is therefore in agreement with our previous thesis.

TABLE 11.—*Median value of homes owned, by degree of industrialization and geographic division: 1930*

| Percent gainfully occupied in manufacturing and mechanical industries | United States | New England | Middle Atlantic | East North Central | West North Central |
|---|---|---|---|---|---|
| 5.00 to 14.99 | [1] $17,750 | [1] $17,750 | | | |
| 15.00 to 24.99 | 5,325 | 6,000 | [1] $13,250 | [1] $13,750 | [1] $6,250 |
| 25.00 to 34.99 | 4,882 | 7,250 | 7,500 | 5,250 | 4,333 |
| 35.00 to 44.99 | 5,813 | 7,250 | 7,750 | 5,250 | 4,250 |
| 45.00 to 54.99 | 5,824 | 6,083 | 6,583 | 5,125 | |
| 55.00 to 64.99 | 6,107 | 6,500 | 6,333 | 5,500 | |
| 65.00 to 74.99 | 6,750 | [2] 7,750 | [2] 6,000 | [2] 6,500 | |

| Percent gainfully occupied in manufacturing and mechanical industries | United States | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|
| 5.00 to 14.99 | [1] $17,750 | | | | | |
| 15.00 to 24.99 | 5,325 | [1] $5,375 | [1] $4,625 | [1] $4,000 | [1] $4,250 | [1] $5,250 |
| 25.00 to 34.99 | 4,882 | 4,750 | 3,875 | 42,500 | 4,500 | 5,583 |
| 35.00 to 44.99 | 5,813 | 5,000 | 4,667 | | 2,750 | 3,375 |
| 45.00 to 54.99 | 5,824 | [2] 4,500 | | [1] 3,750 | | |
| 55.00 to 64.99 | 6,107 | [1] 4,250 | | | | |
| 65.00 to 74.99 | 6,750 | | | | | |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Occupations*, vol. IV, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

As to whether the industrial character of a city has a causal relationship to the median value of owner-occupied homes is difficult to state. It seems to be true that, given the same land values, labor costs, and cost of materials, the median value of the owner-occupied homes in two communities will be dependent on the wealth level of the people for whom they are intended. This much is clear from the extremely high median value of the suburban homes. Middle class persons are likely to pay a larger amount for a home than industrial workers with approximately the same income, and for this reason we could expect owned homes in highly industrialized cities to have a lower median value. (It should be noted that residential land costs are probably less per unit in such cities.) But at the same time it is possible that incomes in cities of this type are so low that home ownership is a privilege inaccessible to the lower economic strata. Hence only those in the upper income groups are likely to own their own homes, which results in a high median value.

Just as rapid population growth with the accompanying threat of a housing shortage promotes home ownership, so it is responsible for high median value. Table 12 shows in general an increasing median value with an increase in rate of growth during the decade 1920–30. Irregularities in this tendency may be due to the fact that the larger cities which have on the whole the highest median values are not the cities which grew most rapidly during the aforementioned period. Nonetheless the reality of such a relationship is attested by its existence in every region but the Middle Atlantic.

TABLE 12.—*Median value of owned homes by rate of growth and geographic division*

| | United States | New England | Middle Atlantic | East North Central | West North Central |
|---|---|---|---|---|---|
| 50 percent and over | $5,773 | $7,750 | $8,875 | $6,417 | [1] $4,500 |
| 30 to 50 percent | 5,313 | 7,250 | 11,714 | 5,750 | 5,000 |
| 15 to 30 percent | 5,724 | 7,063 | 6,875 | 5,625 | 4,000 |
| 5 to 15 percent | 5,600 | 7,084 | 7,125 | 4,625 | 4,417 |
| 0 to 5 percent | 5,688 | 6,685 | 5,875 | 4,500 | [2] 4,000 |
| 0 to −5 percent | 5,500 | 5,500 | 10,750 | [1] 2,750 | |
| −5 to −15 percent | 5,250 | 5,750 | 11,750 | [2] 3,750 | |
| −15 to −30 percent | [1] 2,750 | | | | |

| | United States | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|
| 50 percent and over | $5,773 | $5,250 | $4,500 | $4,542 | $5,250 | $6,750 |
| 30 to 50 percent | 5,313 | 5,125 | 3,750 | 4,063 | | 5,000 |
| 15 to 30 percent | 5,724 | 5,750 | | 5,250 | 4,000 | 4,625 |
| 5 to 15 percent | 5,600 | 5,625 | 4,750 | 3,750 | 4,000 | 3,375 |
| 0 to 5 percent | 5,688 | 4,000 | [1] 5,750 | | | |
| 0 to −5 percent | 5,500 | 3,375 | | | [1] 2,750 | |
| −5 to −15 percent | 5,250 | [2] 3,000 | | | | |
| −15 to −30 percent | [1] 2,750 | [1] 2,750 | | | | |

[1] 1 city. [2] 2 cities.

Compiled from *Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

A concrete exemplification of what has been presented here in tabular and schematic form is contained in the lists of the 50 cities with the highest and the 50 cities with the lowest median rentals (cf. tables 13 and 14). Among those with the highest are the residential suburbs near major metropolitan centers, university cities, State capitals, as well as the large and congested metropolitan centers themselves, such as New York and Chicago. Most of the cities on this list are in the New England and Middle Atlantic States, with a few from the East North Central. The second list is made up largely of cities from the less urbanized areas of the country, with a fair sprinkling of Middle Western industrial cities.

TABLE 13.—*Fifty highest cities in median value of homes owned: 1930*

[Cities over 25,000]

| City | State | Value |
|---|---|---|
| Lower Merion Township | Pennsylvania | Over $20,000 |
| Montclair Township | New Jersey | 18,202 |
| Brookline Town | Massachusetts | 17,695 |
| White Plains | New York | 17,467 |
| New Rochelle | do | 16,927 |
| Evanston | Illinois | 16,217 |
| Mount Vernon | New York | 15,431 |
| University City | Missouri | 15,379 |
| Cleveland Heights | Ohio | 14,493 |
| Yonkers | New York | 13,920 |
| East Orange | New Jersey | 13,474 |
| Oak Park | Illinois | 13,008 |

TABLE 13.—*Fifty highest cities in median value of homes owned: 1930*—Continued

| City | State | Value |
|---|---|---|
| Hartford | Connecticut | $12,965 |
| Atlantic City | New Jersey | 12,504 |
| Newton | Massachusetts | 12,168 |
| West New York | New Jersey | 11,703 |
| Hoboken | do | 11,507 |
| Lakewood | Ohio | 11,447 |
| Union City | New Jersey | 11,347 |
| Highland Park | Michigan | 11,282 |
| Passaic | New Jersey | 10,868 |
| East Cleveland | Ohio | 10,613 |
| Stamford | Connecticut | 10,524 |
| Orange | New Jersey | 10,468 |
| Watertown | Massachusetts | 10,304 |
| New York | New York | 10,264 |
| North Bergen Township | New Jersey | 10,080 |
| Irvington | do | 10,027 |
| Upper Darby Township | Pennsylvania | 9,795 |
| Newark | New Jersey | 9,767 |
| Arlington Town | Massachusetts | 9,626 |
| Plainfield | New York | 9,593 |
| Bloomfield | New Jersey | 9,559 |
| Berwyn | Illinois | 9,366 |
| Holyoke | Massachusetts | 9,255 |
| Washington | District of Columbia | 9,246 |
| Albany | New York | 9,232 |
| New Haven | Connecticut | 9,190 |
| Maywood | Illinois | 9,114 |
| Elizabeth | New Jersey | 9,078 |
| Syracuse | New York | 9,043 |
| Ann Arbor | Michigan | 9,019 |
| Wilkensburg | Pennsylvania | 9,012 |
| Kearney | New Jersey | 8,916 |
| Poughkeepsie | New York | 8,809 |
| New Britain | Connecticut | 8,798 |
| Belleville | New Jersey | 8,616 |
| Cicero | Illinois | 8,420 |
| Norwood | Ohio | 8,291 |
| Chicago | Illinois | 8,228 |

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

TABLE 14.—*Fifty lowest cities in median value of homes owned: 1930*

[Cities over 25,000]

| City | State | Value |
|---|---|---|
| Laredo | Texas | $1,341 |
| Pueblo | Colorado | 2,535 |
| Paducah | Kentucky | 2,581 |
| Joplin | Missouri | 2,598 |
| Butte | Montana | 2,605 |
| Portsmouth | Virginia | 2,620 |
| Ottumwa | Iowa | 2,704 |
| Petersburg | Virginia | 2,717 |
| Bay City | Michigan | 2,761 |
| Kansas City | Kansas | 2,813 |
| Meridan | Mississippi | 3,000 |
| Texarkana | Arkansas | 3,003 |
| Bellingham | Washington | 3,059 |
| Pensacola | Florida | 3,127 |
| Kokomo | Indiana | 3,223 |
| Muskogee | Oklahoma | 3,225 |
| Spokane | Washington | 3,229 |
| Newport News | Virginia | 3,244 |
| Wilmington | North Carolina | 3,250 |
| Tacoma | Washington | 3,267 |
| Augusta | Georgia | 3,348 |
| Tampa | Florida | 3,371 |
| Corpus Christi | Texas | 3,444 |
| New Albany | Indiana | 3,495 |



TABLE 14.—*Fifty lowest cities in median value of homes owned: 1930*—Continued

| City | State | Value |
|---|---|---|
| Fort Smith | Arkansas | $3,502 |
| San Angelo | Texas | 3,508 |
| Montgomery | Alabama | 3,530 |
| Lebanon | Pennsylvania | 3,536 |
| Everett | Washington | 3,550 |
| Springfield | Missouri | 3,646 |
| Hutchinson | Kansas | 3,646 |
| Superior | Wisconsin | 3,657 |
| Macon | Georgia | 3,659 |
| San Antonio | Texas | 3,687 |
| Knoxville | Tennessee | 3,707 |
| Mobile | Alabama | 3,707 |
| St. Joseph | Missouri | 3,709 |
| Colorado Springs | Colorado | 3,767 |
| Austin | Texas | 3,810 |
| Fort Worth | do | 3,811 |
| Clinton | Iowa | 3,812 |
| Lynchburg | Virginia | 3,842 |
| Nashville | Tennessee | 3,861 |
| Johnson City | do | 3,869 |
| Council Bluffs | Iowa | 3,888 |
| Ogden | Utah | 3,897 |
| Saginaw | Michigan | 3,903 |
| Terre Haute | Indiana | 3,919 |
| Newark | Ohio | 3,943 |
| Evansville | Indiana | 3,948 |

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

The situation with regard to rental levels is practically the same as that which obtains for the value of owned homes. With but few and not very significant exceptions rents rise with the size of the city (table 15). The reasons for this have already been touched in connection with home ownership and the value of owner-occupied homes. Higher land costs, higher labor costs, higher tax rates—all of these make necessary a higher rental in order to meet the demand for an adequate return on investment.

TABLE 15.—*Median rental by month by size of city: 1930*

[Cities over 25,000]

| Size of city | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Pacific | Mountain |
|---|---|---|---|---|---|---|---|---|---|---|
| 25,000 to 50,000 | $27.49 | $28.86 | $32.80 | $28.35 | $24.80 | $18.00 | $21.00 | $22.50 | $28 | $28 |
| 50,000 to 100,000 | 29.14 | 29.00 | 33.00 | 35.50 | 27.00 | 19.33 | 16.00 | 22.67 | [1] 24 | 32 |
| 100,000 to 250,000 | 29.17 | 29.00 | 32.00 | 35.00 | 28.00 | 24.00 | 20.00 | 24.00 | [1] 28 | 28 |
| 250,000 to 500,000 | 30.50 | [2] 30.00 | 40.00 | 35.00 | 33.00 | [1] 22.00 | 17.00 | 27.00 | [1] 28 | 31 |
| 500,000 and over | 37.60 | [1] 36.00 | 36.67 | 42.00 | [1] 32.00 | [1] 28.00 | ------ | ------ | ------ | [1] 40 |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

Likewise the relationship of degree of industrialization with median rental is the same as that with median value—the least industrialized (wealthy residential suburbs) are highest, followed by the moderately

industrialized (metropolitan centers), with the most industrialized having the lowest rentals (table 16). The significance of rate of growth for median rental is more or less the same that it was for median value of owner-occupied homes, i. e., the greater the rate of population increase for 1920–30, the higher the rentals. The deviations from this pattern are largely of the same nature as those from the median value pattern (table 17).

TABLE 16.—*Median monthly rental by month by degree of industrialization and geographic division: 1930*

[Cities over 25,000]

| Percentage gainfully occupied persons employed in manufacturing and mechanical industries | Median monthly rental in dollars | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Pacific | Mountain |
| 5.00 to 14.99 | [1] 75.00 | [1] 75.00 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| 15.00 to 24.99 | 26.00 | 30.00 | 56.00 | [2] 74.00 | [2] 40.00 | 22.86 | 20 | 18.80 | 28 | 29.33 |
| 25.00 to 34.99 | 28.40 | 38.00 | 38.00 | 33.33 | 26.00 | 18.00 | 16 | 22.50 | 28 | 32.00 |
| 35.00 to 44.99 | 29.30 | 36.00 | 36.00 | 29.40 | 24.67 | 22.00 | 22 | ------ | [1] 24 | 24.00 |
| 45.00 to 54.99 | 29.30 | 27.00 | 30.40 | 34.00 | ------ | [2] 18.00 | ------ | [1] 28.00 | ------ | [1] 20.00 |
| 55.00 to 64.99 | 28.00 | 25.60 | 28.67 | 32.00 | ------ | [1] 20.00 | ------ | ------ | ------ | ------ |
| 65.00 to 74.99 | 27.33 | [2] 24.00 | [2] 30.00 | 28.00 | ------ | ------ | ------ | ------ | ------ | ------ |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, and *Occupations*, vol. IV, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

TABLE 17.—*Median rental by month by rate of growth of city and geographic division*

| Rate of growth | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| Over 50 percent | $30.80 | $40.67 | $43.00 | $42.50 | [1] $30 | $22.00 | $19.33 | $26.40 | $31 | $34.50 |
| 30 to 50 percent | 29.56 | 32.00 | 58.00 | 34.00 | 34 | 16.00 | 18.00 | 19.00 | ---- | 32.00 |
| 15 to 30 percent | 29.85 | 34.40 | 32.50 | 29.82 | 26 | 13.00 | ------ | 24.00 | 28 | 28.67 |
| 5 to 15 percent | 27.33 | 26.67 | 35.00 | 26.50 | 27 | 25.33 | 24.00 | 23.00 | 25 | 24.00 |
| 0 to 5 percent | 27.82 | 32.67 | 28.00 | 26.00 | [1] 26 | 16.00 | [2] 24.00 | ------ | ---- | ------ |
| 0 to −5 percent | 22.00 | 20.67 | 32.00 | [2] 20.00 | ---- | 16.00 | ------ | ------ | [2] 24 | ------ |
| −5 to −15 percent | 24.00 | 26.00 | [2] 32.00 | [2] 22.00 | ---- | 12.00 | ------ | ------ | ---- | ------ |
| −15 to −30 percent | [2] 16.00 | ------ | ------ | ------ | ---- | [2] 16.00 | ------ | ------ | ---- | ------ |
| −30 to −50 percent | ------ | ------ | ------ | ------ | ---- | ------ | ------ | ------ | ---- | ------ |

[1] 2 cities. [2] 1 city.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

Within any constant class, be it rate of growth, size, or degree of industrialization, very pronounced regional variations are visible. The most industrialized and urbanized areas, namely, the Eastern and Middle Western States, have higher median rentals than the Southern States. The Pacific Coast States, however, are almost on a par with the Middle Western States, although they do not attain the high median rentals of New England and the Middle Atlantic region.

This areal distribution emerges even more clearly from table 18 where we see that of the 50 cities with the highest median rental, the majority are wealthy residential suburbs close to eastern and middle western metropolitan centers, such as Boston, New York, Chicago, Cleveland, Pittsburgh, Philadelphia, or the central cities themselves, such as Chicago and New York. Only three cities on the list are from outside the New England, Middle Atlantic and East North Central regions. These are (1) University City, Mo., which is both a university town and a wealthy suburb,

TABLE 18.—*Fifty highest cities in median rental: 1930*

[Cities over 25,000]

| City | State | Dollars |
|---|---|---|
| Brookline | Massachusetts | 85.55 |
| Evanston | Illinois | 79.44 |
| Cleveland Heights | Ohio | 78.19 |
| University City | Missouri | 72.17 |
| Oak Park | Illinois | 70.72 |
| White Plains | New York | 67.86 |
| East Orange | New Jersey | 64.90 |
| New Rochelle | New York | 63.02 |
| Mount Vernon | do | 61.52 |
| Montclair | New Jersey | 59.76 |
| Lakewood | Ohio | 58.23 |
| Berwyn | Illinois | 57.28 |
| Lower Marion Township | Pennsylvania | 56.47 |
| Highland Park | Michigan | 55.84 |
| East Cleveland | Ohio | 54.52 |
| Upper Darby Township | Pennsylvania | 53.46 |
| Wilkinsburg | do | 53.46 |
| Bloomfield | New Jersey | 52.79 |
| Maywood Village | Illinois | 51.64 |
| Arlington | Massachusetts | 51.44 |
| Ann Arbor | Michigan | 51.43 |
| Irvington | New Jersey | 51.10 |
| Chicago | Illinois | 49.57 |
| Atlantic City | New Jersey | 49.10 |
| Newton | Massachusetts | 48.62 |
| Detroit | Michigan | 47.91 |
| Yonkers | New York | 46.47 |
| New York | do | 46.45 |
| North Bergen Township | New Jersey | 45.96 |
| Dearborn | Michigan | 45.83 |
| Madison | Wisconsin | 45.39 |
| Watertown | Massachusetts | 45.06 |
| Plainfield | New Jersey | 44.55 |
| Washington | District of Columbia | 44.28 |
| Waukegan | Illinois | 42.78 |
| Kearny | New Jersey | 42.72 |
| Pontiac | Michigan | 42.56 |
| West New York | New Jersey | 41.90 |
| Orange | do | 41.23 |
| Belleville | do | 41.03 |
| Cicero | Illinois | 40.90 |
| Medford | Massachusetts | 40.82 |
| Norwood | Ohio | 40.52 |
| San Francisco | California | 40.14 |
| Fargo | North Dakota | 40.03 |
| Rochester | New York | 39.82 |
| Jersey City | New Jersey | 39.76 |
| Newark | do | 39.76 |
| Quincy | Massachusetts | 39.74 |
| Stamford | Connecticut | 39.46 |

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States 1930* (Washington: Government Printing Office, 1933).

(2) San Francisco, Calif., which is one of the great metropolitan centers of the country, and (3) Fargo, N. Dak. The last case is a difficult one to account for. The Real Property Inventory reported a greater than average overcrowding in Fargo in 1934 (23.2 percent as contrasted with an average of 16.8 percent), which may have been due to a supply of dwelling units inadequate to meet the demand. However, it is doubtful whether this housing shortage alone could cause such an increase over the average level for the West North Central region.

The 50 cities with the lowest median rentals are almost identical with the 50 with the lowest median values. They are in the main from the South Atlantic and East South Central States, with a moderate number from the West South Central and a sprinkling of highly industrialized cities from Eastern and Middle Western States (table 19).

TABLE 19.—*Fifty lowest cities in median rental: 1930*

[Cities over 25,000]

| City | State | Dollars |
|---|---|---|
| Laredo | Texas | Less than 10.00 |
| Macon | Georgia | 11.24 |
| Meridan | Mississippi | 11.68 |
| Augusta | Georgia | 11.88 |
| Charleston | South Carolina | 12.41 |
| Montgomery | Alabama | 12.51 |
| Petersburg | Virginia | 13.38 |
| Columbus | Georgia | 13.67 |
| Spartanburg | South Carolina | 13.75 |
| El Paso | Texas | 13.77 |
| Wilmington | North Carolina | 13.77 |
| Greenville | South Carolina | 13.84 |
| Savannah | Georgia | 14.26 |
| Columbia | South Carolina | 14.38 |
| Pensacola | Florida | 14.48 |
| Winston-Salem | North Carolina | 15.28 |
| Texarkana | Arkansas | 15.37 |
| Paducah | Kentucky | 15.46 |
| Mobile | Alabama | 15.81 |
| Monroe | Louisiana | 16.13 |
| Birmingham | Alabama | 16.63 |
| Newport News | Virginia | 16.85 |
| Memphis | Tennessee | 16.90 |
| Lynchburg | Virginia | 17.09 |
| Portsmouth | do | 17.16 |
| Corpus Christi | Texas | 17.45 |
| Joplin | Missouri | 17.64 |
| Nashville | Tennessee | 18.38 |
| Springfield | Missouri | 18.48 |
| Kokomo | Indiana | 18.66 |
| Ottumwa | Iowa | 18.69 |
| New Albany | Indiana | 18.71 |
| Chattanooga | Tennessee | 18.80 |
| Durham | North Carolina | 18.81 |
| Lebanon | Pennsylvania | 18.91 |
| High Point | North Carolina | 19.13 |
| Terre Haute | Indiana | 19.13 |
| Fort Smith | Arkansas | 19.15 |
| Jackson | Mississippi | 19.17 |
| Waco | Texas | 19.36 |
| Johnson City | Tennessee | 19.49 |
| Atlanta | Georgia | 19.66 |
| Bay City | Michigan | 19.77 |
| Kansas City | Kansas | 19.78 |
| Austin | Texas | 19.79 |
| Manchester | New Hampshire | 19.93 |
| Knoxville | Tennessee | 20.22 |
| Fall River | Massachusetts | 20.26 |
| Belleville | Illinois | 20.29 |
| Tampa | Florida | 20.35 |

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States:* 1930 (Washington: Government Printing Office, 1933).

The value or the rental of a dwelling unit is in the last analysis significant only as it is related to the income of the person or family purchasing or renting the dwelling unit. High rentals may create hardships since they take up a larger percentage of the family income and deprive other types of expenditure of the prominence and attention which their importance in the life of the individual demands.

It has already been shown that rents rise with increased urbanization at a given point in time (1930). The percentage of income spent for rent also in general increases with increasing urbanization viewed historically.

A detailed enumeration of the results of urban budgetary studies made in the past 60 years does not, however, point to an unambiguous trend (table 20). Here again the figures for the various years are not always comparable with one another, since what is paid for

TABLE 20.—*Proportion of family budget expended for rent in the United States as shown by various cost-of-living studies, 1874–1930* [1]

| Year | Agency | Percentage |
|---|---|---|
| 1874 | U. S. Bureau of Labor Statistics | 19.18 |
| 1875 | Massachusetts Bureau of Statistics | 17.00 |
| 1883 | do | 19.74 |
| 1884 | Illinois Bureau of Labor Statistics | 17.42 |
| 1887 | Kansas Bureau of Labor | 18.30 |
| 1890 | Missouri Bureau of Labor | 15.38 |
| 1890 | do | 16.63 |
| 1890 | U. S. Department of Labor | 15.06 |
| 1890 | do | 15.60 |
| 1890 | United States Senate report | 22.04 |
| 1890 | do | 19.99 |
| 1901 | Massachusetts Bureau of Statistics | 17.27 |
| 1901 | U. S. Bureau of Labor Statistics | 18.12 |
| 1904 | Mrs. L. B. Moore | 19.40 |
| 1907 | R. C. Chapin | 20.70 |
| 1908 | John R. Howard | 15.00 |
| 1911 | British Board of Trade | 16.66 |
| 1915 | U. S Railroad Commission | 20.00 |
| 1917 | U. S. Bureau of Labor Statistics | 12.91 |
| 1917 | Philadelphia Bureau of Municipal Research | 14.10 |
| 1917 | U. S. Bureau of Labor Statistics | 12.04 |
| 1917 | Dallas Wage Commission | 14.51 |
| 1918 | U. S. Bureau of Labor Statistics | 13.40 |
| 1923 | New York State Commission on Housing and Regional Planning | 18.30 |
| 1923 | do | 20.20 |
| 1923–30 | National Industrial Conference Board | 20.00 |
| 1924 | Leila Houghteling | 15.30 |
| 1926 | Heller commission of University of California | 20.70 |
| 1929 | Standard Statistics Co | 19.00 |
| 1929 | East Side Chamber of Commerce | 19.00 |
| 1930 | Standard Statistics Co | 19.50 |
| 1930 | U. S. Bureau of Labor Statistics | 22.60 |
| 1933 | U. S. Department of Commerce | 23.70 |
| 1934–35 | U. S. Bureau of Labor Statistics (Boston) | 14.3–15.8 |
| 1934–35 | U. S. Bureau of Labor Statistics (Detroit) | 19.4–21.0 |

[1] Source primarily from A. F. Bemis, *The Evolving House*, II (Cambridge, 1924), p. 109.

shelter alone is not always separated from what is paid for fuel and light, nor are the incomes or family size of the persons whose budgets are studied held constant. But if they do not point to a definite historical trend, they do show that the percentage of family expenditures spent for rent has fluctuated largely within the limits of 15 to 20 percent of the total, occasionally going higher or lower.

Table 21 offers a corroboration of the statement that as the Nation became more urbanized there was a trend toward an increase in the percentage of income spent for rent. Income being held constant, there is, with only minor irregularities, a definite increase of percentage of annual income spent on rent with the increase in the size of city. Exactly the same type of phenomenon is represented in table 22, where we see that the ratio of the value of owner-occupied dwellings to income increases with an increase in city size. Where the ratio is larger, there can be but little doubt that the burden from which the home owner suffers is larger, since the ratio of carrying charges to total value is usually more or less the same regardless of the magnitude of the total value. Additional confirmation is to be seen in tables 21 and 22, where the renters and owners of dwelling units in the most urbanized parts of the country (New England and Middle Atlantic) are shown to be paying a larger share of their incomes for housing expenses than those in other regions.

It would be wrong, however, to believe that degree of urbanization is the only determinant of the percentage of income spent for shelter. Although one of the

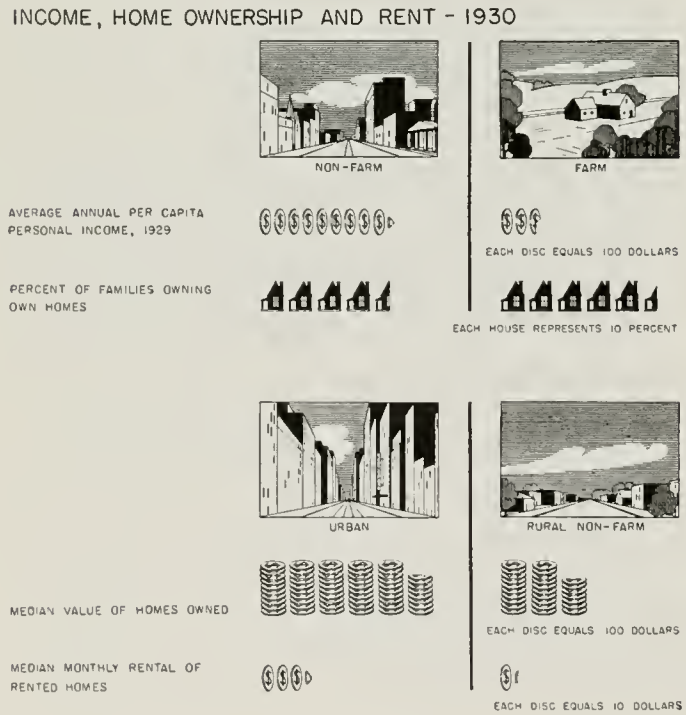



FIGURE 38

TABLE 21.—*Percent annual rent is of tenant's annual income, by specified city size groups, geographic division, and degree of industrialization*

| Annual income | $500 to $749 [1] | $1,500 to $1,999 [1] | $3,000 to $4,499 [1] |
|---|---|---|---|
| City size group: | *Percent* | *Percent* | *Percent* |
| 10,000 to 25,000 | [2] 33.00 | [2] 18.00 | [2] 14.00 |
| 25,000 to 50,000 | 33.00 | 19.33 | 14.33 |
| 50,000 to 100,000 | 30.00 | 17.60 | 15.75 |
| 100,000 to 250,000 | 35.50 | 19.50 | 15.63 |
| 250,000 to 500,000 | 35.50 | 20.33 | 15.43 |
| 500,000 and over | [3] 39.00 | [3] 23.00 | [3] 18.00 |
| Geographic division: | | | |
| New England and Middle Atlantic | 46.00 | 21.33 | 15.86 |
| East and West North Central | 35.00 | 20.00 | 15.00 |
| South Atlantic, and East and West South Central | 29.00 | 18.60 | 13.88 |
| Mountain and Pacific | 34.00 | 19.00 | 14.50 |
| Percent gainfully occupied in manufacturing and mechanical industries: | | | |
| 15.00 to 24.9 | 32.0 | 20.8 | 14.4 |
| 25.00 to 34.9 | 33.3 | 19.8 | 14.3 |
| 35.00 to 44.9 | 35.0 | 19.5 | 15.5 |
| 45.00 to 54.9 | 40.0 | 20.0 | 16.0 |
| 55.00 to 64.9 | [2] 37.0 | [2] 19.0 | [2] 13.5 |

[1] No data for Reno, Nev., Williamsport, Pa., Burlington, Vt., Decatur, Ill., Albuquerque, N. Mex., and Knoxville, Tenn.
[2] 2 cities.
[3] 1 city.

Compiled from *Financial Survey of Urban Housing* (mimeographed advance sheets), Bureau of Foreign and Domestic Commerce, Department of Commarce, Washington, D. C.

TABLE 22.—*Ratio of value of dwellings to 1933 income, by specified city size groups, geographic division, and degree of industrialization*

| Annual income | $500 to $749 [1] | $1,500 to $1,999 [1] | $3,000 to $4,499 [1] |
|---|---|---|---|
| City size group: | *Percent* | *Percent* | *Percent* |
| 10,000 to 25,000 | [2] 4.70 | [2] 1.80 | [2] 1.90 |
| 25,000 to 50,000 | 5.30 | 2.20 | 1.80 |
| 50,000 to 100,000 | 4.70 | 2.40 | 1.95 |
| 100,000 to 250,000 | 5.30 | 2.53 | 1.95 |
| 250,000 to 500,000 | 5.30 | 2.45 | 1.93 |
| 500,000 and over | [3] 9.00 | [3] 3.70 | [3] 2.70 |
| Geographic division: | | | |
| New England and Middle Atlantic | 8.80 | 3.60 | 2.32 |
| East and West North Central | 5.60 | 2.47 | 1.95 |
| South Atlantic and East and West South Central | 4.65 | 2.50 | 1.94 |
| Mountain and Pacific | 4.80 | 2.20 | 1.72 |
| Percent gainfully occupied in manufacturing and mechanical industries: | | | |
| 15.00 to 24.9 | 5.8 | 2.0 | 1.9 |
| 25.00 to 34.9 | 4.4 | 2.3 | 1.6 |
| 35.00 to 44.9 | 5.2 | 2.6 | 2.0 |
| 45.00 to 54.9 | 8.0 | 3.3 | 2.3 |
| 55.00 to 64.9 | [2] 9.5 | [2] 3.8 | [2] 2.9 |

[1] No data for Reno, Nev.; Williamsport, Pa.; Burlington, Vt.; Decatur, Ill.; Albuquerque, N. Mex.; and Knoxville, Tenn.
[2] 2 cities.
[3] 1 city.

Compiled from *Financial Survey of Urban Housing* (mimeographed advance sheets), Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C.

greatest of budget analysts, Ernst Engel, was of the opinion that the percentage of expenditures for shelter does not vary with increase in income, there seems now

to be quite convincing evidence to the effect that the percentage expended for housing decreases with an increasing income,[7] although certain qualifications must be made for differentiations in social status and the "social standard of living." "In other words for each level of income there is a definite level of expenditure for housing. And that level of expenditures in all but a narrow income range is far wide of the old rule-of-thumb figure of 20 to 25 percent."[8]

In every size class, in every region, and in every degree of industrialization (table 21) there is a sharp and regular decrease in the percentage of income spent for rent as we pass from the $500–$749 through the $1,500–$1,999 to the $3,000–$4,499 per annum income classes. In the city of Chicago, for instance, the amount spent for rent by families with incomes of less than $500 per annum and not on relief was 72.2 percent of net current income. Those with incomes from $500 to $750 per annum spent 43.6 percent, those with $750 to $1,000 per annum spent 31.4 percent, those with $1,000 to $2,000 spent 22.6 percent, and at the $10,000 level 11.2 percent was spent for rent.[9] Practically the same relationship obtains with respect to the ratio of the value of owner-occupied dwellings to annual income.[10]

[7] Factually this was demonstrated in the United States as early as the first decade of the century by L. B. More and R. C. Chapin. In principle, however, it had been worked out by Heinrich Schwabe as early as 1868. In 1930 Friedrich Lütge worked out the whole problem in a more refined way by taking into account not merely differences in income but differences in social status. Cf. Carl Zimmerman, *Consumption and Standards of Living* (New York, 1936), ch. VII.

[8] "What Can Families Pay for Housing?" *Insured Mortgage Portfolio*, 1 (August 1936), p. 10.

[9] From Urban Consumption Study by Bureau of Labor Statistics and Works Progress Administration, reported in *Chicago Tribune*, February 21, 1937.

[10] It is perhaps worthy of attention that the range of differentiation among cities of different sizes, geographic divisions, and degrees of industrialization is greater in the lower income groups than in the higher ones, and raises the following hypothesis: Within the same income ranges, the conditions of urban life accentuate class differences in standards of living. In another formulation: As compared with the "rich-poor" relationship in less intensely urbanized communities, the wealthier strata of the great metropolitan centers are "better off" than the poorer ones to a greater extent than the mere income figures would seem to indicate.

Figures 39 and 40 illustrate graphically the differentiation in percentage of income expended for rent, with reference to income differentiations, within single communities.

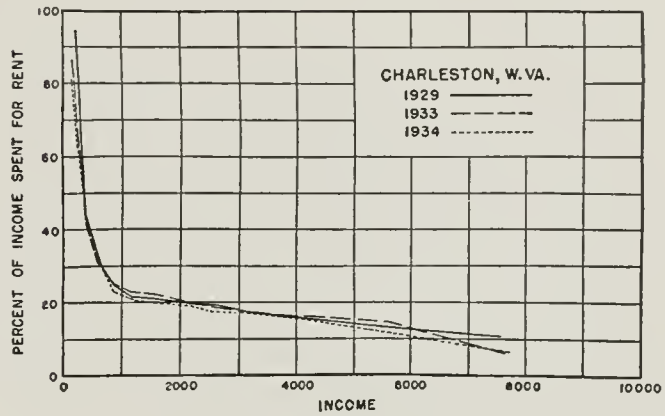



FIGURE 39

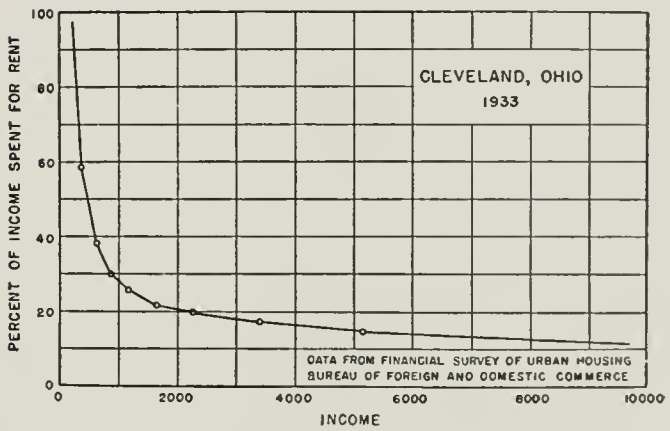



FIGURE 40

# PART II—SECTION 2
# PHYSICAL CHARACTERISTICS OF THE URBAN DWELLING

## Type of Structure

The often-made contrast between rural "individualism" and urban "collectivism" [1] as distinct ways of life nowhere has a more striking clear-cut objective expression than in the differences between the rural and urban dwelling structure. Rural families, because both of the persistence of older traditions and of a more favorable spatial situation, dwelt almost exclusively in single-family dwellings in 1930, while the percentage occupying multifamily structures is almost negligible. In urban communities, we find a strikingly different picture. Here less than two-thirds lived in single-family houses in 1930, while a fifth lived in buildings holding at least three families (cf. table 23).

TABLE 23.—*Percentage distribution of families in the United States by type of dwelling, by type of community, 1930* [1]

| | Single-family | Two-family | Multi-family |
|---|---|---|---|
| | *Percent* | *Percent* | *Percent* |
| 5 cities over 1,000,000 | 36.2 | 17.5 | 46.3 |
| All other urban | 70.8 | 16.2 | 13.0 |
| Rural and farm | 94.4 | 4.7 | .8 |

[1] Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

That the multifamily dwelling is specifically characteristic of large urban agglomerations and increases in number directly with the size of the community may be demonstrated by a comparison of the five largest cities with all other urban places in this respect. In the former, 46.3 percent of all families occupy multifamily dwellings, while in the latter, only 13 percent do so (cf. table 24). In greater detail, and with certain slight qualifications, the same relationship is to be observed in an analysis of the percentage of families living in one-family houses in cities with over 25,000 inhabitants (cf. table 25). For the country as a whole there is an inverse relationship between size of city and percentage of families living in one-family houses. Apparent exceptions are the Middle and South Atlantic States, where the cities over 500,000 have a higher percentage than those below. These exceptional cases are due to Philadelphia in the Middle Atlantic and Baltimore in the South Atlantic, both of which, because of the way in which they were originally planned and because of a firmly rooted tradition of domestic architecture which arose in response to early nineteenth century needs, have extremely high proportions of single-family houses.[2]

[1] Neither "individualism" nor "collectivism" is used here in the sense of two contrasting systems of economic enterprise.

TABLE 24.—*Number and percent of dwellings and families by class of dwelling for United States: 1930*

| | Dwellings | | Families | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Total | 25,204,976 | 100.0 | 29,904,663 | 100.0 |
| 1-family dwellings | 22,833,110 | 90.6 | 22,833,110 | 76.4 |
| 2-family dwellings | 1,728,087 | 6.9 | 3,456,174 | 11.6 |
| 3-or-more family dwellings | 643,779 | 2.6 | 3,615,379 | 12.1 |
| Urban | 13,046,699 | 100.0 | 17,372,524 | 100.0 |
| 1-family dwellings | 11,001,861 | 84.3 | 11,001,861 | 63.3 |
| 2-family dwellings | 1,430,570 | 11.0 | 2,861,140 | 16.5 |
| 3-or-more family dwellings | 614,268 | 4.7 | 3,509,523 | 20.2 |
| Rural | 12,158,277 | 100.0 | 12,532,139 | 100.0 |
| 1-family dwellings | 11,831,249 | 97.3 | 11,831,249 | 94.4 |
| 2-family dwellings | 297,517 | 2.4 | 595,034 | 4.7 |
| 3-or-more family dwellings | 29,511 | .2 | 105,856 | .8 |

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States; 1930* (Washington: Government Printing Office, 1933).

TABLE 25.—*Percent families living in 1-family houses by size of city and geographic region*

| Size of city | United States | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific |
|---|---|---|---|---|---|---|---|---|---|---|
| 25,000 to 50,000 | 80.3 | 52.50 | 64.17 | 82.50 | 85.83 | 82.27 | 77.50 | 82.50 | 81.25 | 87.19 |
| 50,000 to 100,000 | 75.16 | 43.33 | 55.00 | 71.88 | 84.17 | 76.88 | 72.50 | 79.17 | [1]82.50 | 82.50 |
| 100,000 to 250,000 | 74.00 | 33.75 | 55.00 | 80.00 | 80.83 | 80.00 | 77.50 | 75.83 | [1]77.50 | 82.50 |
| 250,000 to 500,000 | 65.83 | [1]32.50 | 22.50 | 77.50 | 63.75 | [2]60.00 | 76.25 | 78.75 | [1]72.50 | 80.00 |
| Over 500,000 | 47.50 | [1]22.50 | 45.00 | 45.00 | [1]42.50 | [1]72.50 | ------ | ------ | ------ | 60.00 |

[1] 1 city. [2] 2 cities.

Compiled from *Population: Families*, vol. VI, *Fifteenth Census of the United States: 1930* (Washington: Government Printing Office, 1933).

[2] Mr. Bernard Newman, secretary of the Philadelphia Housing Association, says: "The city assessor's list for 1928 credits Philadelphia with 415,045 buildings of all kinds—used in whole or in part for human habitation. The Division of Housing and Sanitation has a record of 9,654 multiple-houses listed. This figure is probably incomplete, but there are still over 400,000 one-family dwellings in Philadelphia. The converted dwelling type of tenement is rarely over three stories high and does not average over five families per building, so that even in such type of occupancy Philadelphia has not accepted the barracklike structure so common in tenement cities." ("What the Rest of the Country Can Learn from Philadelphia," *Housing Problems in America*, vol. X (New York: 1930), p. 39).

A high frequency of multifamily dwellings seems to be a characteristic of the Eastern States, i. e., New England and the Middle Atlantic regions. In the Middle West, with its larger component of old American stock and its more typically American way of life, the single-family dwelling still persists to a very great degree. The Pacific coast is high in single-family dwellings, nor are the Southern States far behind. The extent to which single-family dwellings are characteristic of the Middle Western city, which is predominantly industrial, is shown in table 26, in which 27 out of the 50 cities with highest percentages of single-family dwellings are in those States, while the remainder represent a scattering from the Pacific coast, the South, and a few residential suburbs and heavily industrialized cities in the East, notably Pennsylvania, where the single-family dwelling seems to have a high position among the cultural values of the population. Table 27 shows the extent to which non-single-family dwellings (either two-or multifamily structures) have their concentration in the industrial and urbanized East (of the 45 cities with the lowest percentage of families residing in one-family dwellings, only two, Ohio cities, are from outside the New England and Middle Atlantic regions, while none at all are from Pennsylvania).

Even the relatively high proportion of urban families living at present in multifamily structures does not reflect the tendency of recent years adequately. Multifamily dwellings are being constructed at a rate which is disproportionately high when compared with their present representation. All through the twenties, and

TABLE 26.—*Fifty cities with highest percent of families residing in 1-family dwellings* [1]

| City | State | Percent |
|---|---|---|
| Council Bluffs | Iowa | 92.1 |
| Bay City | Michigan | 92.0 |
| Newark | Ohio | 91.6 |
| Laredo | Texas | 91.6 |
| Camden | New Jersey | 91.6 |
| Lebanon | Pennsylvania | 91.4 |
| La Fayette | Indiana | 91.4 |
| Mishawaka | do | 91.1 |
| Elkhart | do | 91.1 |
| Alhambra | California | 91.1 |
| Kokomo | Indiana | 90.8 |
| Massillon | Ohio | 90.7 |
| Marion | do | 90.5 |
| Hutchinson | Kansas | 90.5 |
| Port Huron | Michigan | 90.4 |
| Ottumwa | Iowa | 90.3 |
| Tucson | Arizona | 90.0 |
| Burlington | Iowa | 89.9 |
| Terre Haute | Indiana | 89.7 |
| San Bernardino | California | 89.7 |
| Bellingham | Washington | 89.5 |
| Riverside | California | 89.4 |
| Richmond | Indiana | 89.3 |
| Fresno | California | 89.1 |
| Upper Darby Township | Pennsylvania | 88.9 |
| Santa Ana | California | 88.7 |
| Joplin | Missouri | 88.7 |
| Saginaw | Michigan | 88.0 |
| St. Petersburg | Florida | 87.8 |
| Salem | Oregon | 87.7 |
| Warren | Ohio | 87.5 |
| Fort Wayne | Indiana | 87.5 |
| Sharon | Pennsylvania | 87.4 |
| Baton Rouge | Louisiana | 87.4 |
| Bakersfield | California | 87.4 |
| Texarkana | Arkansas | 87.2 |
| Zanesville | Ohio | 87.2 |
| Lower Merion Township | Pennsylvania | 87.2 |
| Cedar Rapids | Iowa | 87.2 |
| Fond du Lac | Wisconsin | 87.1 |
| Evansville | Indiana | 87.1 |
| South Bend | do | 86.9 |
| Altoona | Pennsylvania | 86.8 |
| Trenton | New Jersey | 86.7 |
| Columbus | Ohio | 86.7 |
| Springfield | do | 86.5 |
| San Diego | California | 86.5 |
| Santa Barbara | do | 86.4 |
| Lima | Ohio | 86.3 |
| New Albany | Indiana | 86.2 |

[1] Data compiled from: *Population: Families*, Fifteenth Census of the United States, vol. VI (Washington: Government Printing Office, 1933)

TABLE 27.—*Forty-five cities with lowest percent of families residing in 1-family dwellings* [1]

| City | State | Percent |
|---|---|---|
| Hoboken | New Jersey | 14.2 |
| Union City | do | 14.2 |
| West New York | do | 16.9 |
| New York | New York | 17.1 |
| Jersey City | New Jersey | 18.4 |
| Hartford | Connecticut | 21.2 |
| Newark | New Jersey | 21.4 |
| Bayonne | do | 23.3 |
| Passaic | do | 23.8 |
| Somerville | Massachusetts | 24.0 |
| Chelsea | do | 24.4 |
| New Britain | Connecticut | 24.4 |
| Boston | Massachusetts | 24.6 |
| Chicago | Illinois | 25.0 |
| Fall River | Massachusetts | 25.1 |
| Central Falls | Rhode Island | 26.0 |
| Woonsocket | do | 27.2 |
| Holyoke | Massachusetts | 27.4 |
| Lawrence | do | 27.9 |
| Yonkers | New York | 28.2 |
| Paterson | New Jersey | 28.7 |
| Worcester | Massachusetts | 28.8 |
| Irvington | New Jersey | 31.3 |
| Garfield | do | 32.1 |
| Providence | Rhode Island | 32.2 |
| Bridgeport | Connecticut | 33.2 |
| Cambridge | Massachusetts | 33.4 |
| Poughkeepsie | New York | 34.3 |
| East Orange | New Jersey | 35.9 |
| New Bedford | Massachusetts | 35.9 |
| Amsterdam | New York | 36.5 |
| Troy | do | 36.5 |
| Everett | Massachusetts | 36.7 |
| Albany | New York | 36.8 |
| Lewiston | Maine | 37.4 |
| Springfield | Massachusetts | 37.7 |
| Pawtucket | Rhode Island | 38.3 |
| Brookline | Massachusetts | 38.4 |
| Lynn | do | 38.4 |
| Mount Vernon | New York | 38.4 |
| North Bergen Township | New Jersey | 38.7 |
| Salem | Massachusetts | 39.0 |
| Kearney | New Jersey | 39.4 |
| East Cleveland | Ohio | 39.5 |
| Utica | New York | 39.6 |

[1] Compiled from: 15th Census of the United States, *Population: Families*, vol. VI. (Washington: Government Printing Office, 1933).

especially in the latter half, almost as many if not more families were being provided with dwellings in multifamily structures as in single-family ones. Beginning with the depression the percentage of multiple dwelling units fell, but with 1933 it again began to rise, until in 1935 it approximated once more the high level of the last half of the preceding decade (cf. table 28). It seems likely that this tendency for multiple dwelling structures to displace single-family units in new construction will continue.

Not only has there been an increasing tendency to concentrate families in multifamily structures, but the structures themselves have been becoming larger and accommodate more families. Here, too, the data are fragmentary, but trends for New York City, which, of course, are not held as typical, but which are probably reflected in a somewhat milder form in all other metropolitan centers, reveal that

* * * in Manhattan, the average of new construction rose from 36.1 suites per house in 1913 to 52.4 in 1924 and 61.5 in 1928. In the Bronx, the number changed from 22.4 in 1913 to 40.2 in 1923, then held steady around 25.6 for 1925, 1926, and 1927, and rose to 29.7 in 1928. In Brooklyn, the average of new construction rose from 11.2 in 1913 to 15.3 in 1915 and 1918, fell off in the intervening years, and came back to 14.0 in 1928. In Queens, the figures were * * * 6.6 in 1913 (and) * * * 16.3 in 1928.

Except in Brooklyn where the trend was definitely toward the six-family house rather than the larger type up to 1924, the tendency has been toward larger buildings, although between 1921 and 1925 there was a decided swing back to the smaller structure. Since 1915, however, the tendency in all boroughs has been toward the larger building, and the general size of structure in this period is much larger than those erected before the war.[3]

A less precise confirmation of this trend on a nation-wide scale is to be found in the following table (table 29). It should be added that its interpretation in this context assumes either stability or decrease in the size of each family unit within the apartment structure.

Such a development is to be expected as long as there is a tendency towards multifamily dwelling based on the necessity of overcoming high land costs and of being within easy reach of certain points, such as place of work, recreation, and shopping, when these are already concentrated. As long as these functions remain concentrated in the city pattern, as long as transportation fails appreciably to reduce the time loss connected with suburban commutation, and as long as the cost of maintaining skyscraper or near skyscraper apartment houses does not go beyond the reach of all but a negligible few, the mammoth apartment building close to the central business district will continue to flourish. Naturally there are certain definite limits to this tendency since not everyone in the city works in the central business district. But even in other parts of the city, it seems probable that structures will become larger than they have been heretofore because of the economies they allow in construction and operation (a marginal situation is reached at the transition point from the walk-up to the elevator apartment) and because of the large

[3] Thomas Adams and Wayne D. Heydecker, "Housing Conditions in the New York Region," *Buildings: Their Uses and the Spaces about Them, Regional Survey of New York and Its Environs* (New York, 1931), vol. VI, pp. 230–240.

TABLE 28.—*Number and percent of families provided for in different kinds of dwellings in 257 identical cities, 1921–35* [1]

| Year | Number of families provided for in— | | | | Percent of families provided for in— | | |
|---|---|---|---|---|---|---|---|
| | 1-family dwellings | 2-family dwellings | Multiple-family dwellings | All classes of dwellings | 1-family dwellings | 2-family dwellings | Multiple-family dwellings |
| 1921 | 130,873 | 38,858 | 58,814 | 224,545 | 58.3 | 17.3 | 24.4 |
| 1922 | 179,364 | 80,252 | 117,689 | 377,305 | 47.5 | 21.3 | 31.2 |
| 1923 | 207,632 | 96,344 | 149,697 | 453,673 | 45.8 | 21.2 | 33.0 |
| 1924 | 210,818 | 95,019 | 137,082 | 442,919 | 47.6 | 21.5 | 30.9 |
| 1925 | 226,159 | 36,145 | 178,918 | 491,222 | 46.0 | 17.5 | 36.4 |
| 1926 | 188,074 | 64,298 | 209,842 | 462,214 | 40.7 | 13.9 | 45.4 |
| 1927 | 156,512 | 54,320 | 196,263 | 406,095 | 38.3 | 13.4 | 48.3 |
| 1928 | 136,907 | 43,096 | 208,673 | 388,678 | 35.2 | 11.1 | 53.7 |
| 1929 | 98,164 | 27,813 | 118,417 | 244,394 | 40.2 | 11.4 | 48.5 |
| 1930 | 57,318 | 15,145 | 52,859 | 125,322 | 45.7 | 12.1 | 42.2 |
| 1931 | 48,330 | 11,310 | 38,538 | 98,178 | 49.2 | 11.5 | 39.3 |
| 1932 | 19,526 | 3,400 | 4,453 | 27,381 | 71.3 | 12.4 | 16.3 |
| 1933 | 14,437 | 2,124 | 9,318 | 25,879 | 55.8 | 8.2 | 36.0 |
| 1934 | 13,397 | 1,457 | 7,209 | 22,063 | 60.7 | 6.6 | 32.7 |
| 1935 | 31,030 | 3,023 | 21,757 | 55,810 | 55.6 | 5.4 | 39.0 |

[1] Taken from *Handbook of Labor Statistics*, 1936 edition (Washington: U. S. Department of Labor, Bureau of Labor Statistics), p. 213.

TABLE. 29.—*Floor space for apartment building, by regions, 1920–29* [1]

[Figures represent the average number of square feet of floor space per apartment house of the new construction for each year, as indicated by contracts awarded in 37 States.]

| Year | New England | New York and northern New Jersey | Middle Atlantic | Pittsburgh | Central West | Northwest | Southeast | Texas | Average for all regions |
|---|---|---|---|---|---|---|---|---|---|
| 1920 | 4,797 | 10,670 | 6,623 | 7,773 | 7,897 | [2]14,711 | (3) | (3) | 7,671 |
| 1921 | 3,428 | 12,690 | 6,747 | 5,953 | 7,924 | 7,909 | (3) | (3) | 8,326 |
| 1922 | 3,848 | 13,313 | 8,856 | 5,602 | 6,998 | 4,729 | (3) | (3) | 7,605 |
| 1923 | 4,410 | 14,556 | 6,084 | 4,883 | 6,417 | 5,561 | 7,898 | (3) | 8,021 |
| 1924 | 4,509 | 13,826 | 6,962 | 4,236 | 5,716 | 3,949 | 4,319 | (3) | 7,067 |
| 1925 | 4,699 | 17,021 | 7,203 | 4,205 | 7,579 | 3,978 | 5,875 | 4,648 | 8,327 |
| 1926 | 4,138 | 18,429 | 7,908 | 4,319 | 8,657 | 4,600 | 6,147 | 3,434 | 9,436 |
| 1927 | 4,093 | 16,361 | 8,902 | 5,137 | 9,142 | 4,176 | 4,192 | 2,904 | 9,045 |
| 1928 | 7,869 | 20,248 | 14,207 | 8,991 | 11,911 | 6,877 | 6,255 | 4,877 | 13,843 |
| 1929 | 9,431 | 22,107 | 16,370 | 7,596 | 10,478 | 4,953 | 6,755 | 5,008 | 13,199 |

[1] F. W. Dodge Corporation, special compilation. (The territory included in each district is roughly as follows: (1) The six New England States; (2) New York State and northern New Jersey; (3) eastern half of Pennsylvania, rest of New Jersey, Maryland, Delaware, District of Columbia, Virginia; (4) western half of Pennsylvania, States of West Virginia, Kentucky, Ohio; (5) southern peninsula of Michigan, the States of Indiana, Illinois, Missouri, Oklahoma, Kansas, Nebraska, Iowa, most of Wisconsin, parts of Arkansas, Tennessee, and Mississippi; (6) States of Minnesota, North and South Dakota, western Wisconsin, and upper peninsula of Michigan; (7) States of North and South Carolina, Georgia, Florida, Alabama, Louisiana, parts of Mississippi, Tennessee, and Arkansas; (8) State of Texas.)

[2] Due to the relatively small number of apartments constructed in the Northwest district, only 71 in 1920, the average is unduly influenced by a few large buildings.

[3] No data.

Source: R. D. McKenzie, *The Metropolitan Community* (New York, 1933), p. 219.

amount of open space which they leave for recreational and decorative purposes. Just how far the attitude of the occupants towards living under such conditions will impose certain restrictions on their development it is difficult to determine. At any rate, the diminishing possibilities and desirability of ownership of one's own home, together with the cultural changes favorable to apartment house dwelling in general, seem to open the way within the coming years for a considerable increase in the size of the average structure.

The construction of a larger number of family units instead of one on the land area represents a great improvement in the chances for a profitable investment, and leads consequently to a great proliferation of multifamily structures. Nor should it be overlooked that the modern multifamily building is "the only form of housing that has been developed which effects any reasonable economies by wholesale production." [4] To this should be added a large number of other aspects of modern city life which tend to place serious obstacles in the way of the single-family dwelling.

Among these are the increasing concentration of the executive and administrative functions of commercial and industrial enterprises in central business districts of large metropolitan centers which necessitates a very large personnel, part of whose efficiency depends on punctual, easy transportation. Since the urban transportation system can be extended only at great cost, and, even if extended of necessity, involves long periods of travel each day, there has been in the post-war period a tendency called the "reflow" which has brought many white collar workers to seek residence near their place of employment. It is this tendency which is expressed in the skyscraper apartment houses around Washington Square in New York, Rittenhouse Square in Philadelphia, and the Near North Side in Chicago. The increased demand for dwellings in an area quite limited in extent has also led to the remodelling of large old-style single-family residences already in existence to fit them for multifamily uses.

Another complex of factors which is conducive to the progress of the multifamily dwelling is the change which the family has undergone in recent years. The transfer to agencies outside the home of a large number of activities which were formerly carried on by the family within the home has decreased the amount of space required. Whereas formerly the functions connected with the family meals—such as cooking, baking, and preserving, etc.—required a kitchen spacious enough to contain a large stove, equipment cabinets, and closets, with ample room for work and storage, the increase in the use of commercially prepared foods has rendered much of the storage and work space unnecessary. The transfer of certain functions from the household to other agencies has also decreased the need for servants living on the premises where they are employed. Thus, in 1900, 33.2 percent of servants employed lived in their own homes, while in 1920, 49.6 percent were doing so. At the same time, the increased cost of housing space has probably acted in the same direction. In any case, the decreased number of persons per dwelling unit has undoubtedly been a factor in the decreasing demand for space (cf. table 30).[5]

TABLE 30.—*Number of persons per suite in New York City*

| Year | Number | Year | Number |
|---|---|---|---|
| 1913 | 4.18 | 1925 | 3.65 |
| 1915 | 4.4 | 1929 | 3.12 |
| 1920 | 4.25 | | |

Albert F. Bemis, *The Evolving House*, Cambridge, Mass., 1934, vol. II, p. 54.

The removal of recreation from the home, changing attitudes towards the honorific value of a large front yard with well-groomed hedges, etc., the probable decrease in extensive interfamilial visiting, thus rendering superfluous the spare room (cf. R. S. and H. Lynd, *Middletown* (New York: 1929), p. 275), the decrease in family size; the diminution of the problems connected with heating—these are among the many social factors which are creating attitudes hospitable to the replacement of the spacious single-family house by the usually less spacious apartment.

### Size of Dwelling Unit

Another aspect of contemporary housing closely bound up with the multiple dwelling unit problem, which is a decisive force in moulding the physical face of the city and the changes which reflect some of the deeper changes in family life of recent times, is the size of the dwelling unit. The increase in multifamily structures is both a cause and a result of the tendency towards a decrease in the size of the family dwelling

[4] Thomas S. Holden, *Building and Loan Annals*, (Chicago, 1930), p. 36.

[5] According to William F. Ogburn and Clark Tibbitts (*Recent Social Trends*, New York, McGraw Hill Book Co., Inc., 1933) 1, p. 664), about nine-tenths of city homes use baker's bread only.

Canning is leaving the home (100 percent increase in per capita quantity of vegetables, fruits, and soups canned outside the home during the decade from 1919 to 1929). Another index of the removal of economic functions from the home is the 19.4 percent decrease from 1910–20 of female cooks (of the home type) as contrasted with the 11 percent increase in male cooks (of the chef type).

Laundering also is leaving the home, though not in the same measure. One study made by the United States Bureau of Home Economics indicated that in 1930 only 33 percent had no laundering done outside the home, while only 3 percent sent all their laundry out. Data concerning the increase in power utilized in laundry establishments, etc., indicate a great increase from 1919 to 1929. However, the increased use of home washing machines, as well as the joint laundering facilities with which most apartment houses are now equipped, also tend to diminish the space needs even of those families which do not send their laundry out.

Another factor in the decreased demand for space is the substitution of the gas stove for the wood stove for cooking. As long as the wood stove was used it was necessary to have storage space for the woodpile, but with the inception of the gas stove, this space became superfluous. The growth in gas stove production from 1899 to 1927 has been more than nine times the growth in the number of families (cf. John Dollard, *The Changing Functions of the American Family*. University of Chicago, Ph. D., thesis Mss. (1931), p. 80).

unit. The extent to which this is taking place cannot be determined in comprehensive Nation-wide terms, nor is it possible to make a systematic comparison of very large- and middle-sized communities in this regard. Evidence does exist, however, which allows us to draw certain conclusions. According to the Eighteenth Annual Report of the Commissioner of Labor (U. S. Department of Labor) in 1901, wage-earning families owning their own homes had an average of 5.92 rooms, while those renting had 4.73 rooms. The 1918 report on the Cost of Living in the United States, which did not distinguish between those renting and those owning their own homes, gave 5 rooms as the average for families in one-family houses and 4.5 for those in apartments.[6]

The tendency towards a smaller family dwelling unit is corroborated by A. G. Hinman, who points out that the apartment houses built from 1913 to 1919 averaged 4.6 rooms per family unit while those built from 1924 to 1930 averaged 3.5 rooms per unit.[7] A similar tendency is indicated for New York City in the *Regional Survey of New York and Environs*, where it is stated that in 1913:

> * * * the average number of rooms per apartment in new construction was 4.19; in 1925, it was 3.63; in 1926, 3.49; in 1927, 3.39; and in 1928, 3.34. The most remarkable fact is of course the increase in the number of three-room apartments as against decreases in all larger types, taking the period as a whole. In 1913 there were constructed 5,338 apartments of 3 rooms, as against 20,903 constructed in 1925; 33,071 in 1926; 43,141 in 1927; and 39,849 in 1928.[8]

From 1912 to 1918 only 0.5 percent of new apartments were of one room, while in 1931, 9.3 percent of new apartment units were of one room. During the same period the proportion of apartments with more than three rooms fell from 80 percent to 25 percent.[9] Similar evidence is available in table 31, compiled by A. F. Bemis from data furnished by the Tenement House Department of the Borough of Manhattan, which indicates that the average number of rooms per new apartment fell from 4.69 in 1902 to 3.01 in 1932.[10] Similar conclusions are derivable from table 32. Bemis also asserts that the average size of rooms likewise seems to have lessened, but provides no supporting evidence.

TABLE 31.—*Average number of rooms per new apartment in New York City and boroughs*

| | Manhattan | Bronx | Brooklyn | Queens | Richmond | New York City |
|---|---|---|---|---|---|---|
| 1902 | 4.71 | 4.63 | 4.66 | 3.33 | 5.33 | 4.69 |
| 1915 | 4.42 | 3.91 | 3.96 | 4.48 | [1] 4.31 | 4.09 |
| 1930 | 3.79 | 3.27 | 3.20 | 3.08 | 3.03 | 3.39 |
| 1931 | 2.90 | 3.23 | 3.14 | 2.86 | 3.06 | 3.05 |
| 1932 | 2.54 | 3.33 | 3.08 | 2.83 | 2.71 | 3.01 |

[1] 1910.

Albert F. Bemis, *The Evolving House*, Cambridge, Mass., vol. II, p. 53.

TABLE 32.—*Percentage distribution of number of rooms per apartment constructed in 1912 and 1924, New York City* [1]

| Number of rooms | Percent distribution | |
|---|---|---|
| | 1912 | 1924 |
| 3 | 20 | 42 |
| 4 | 44 | 38 |
| 5 | 24 | 12 |
| 6 | 5 | 4 |
| All others | 7 | 4 |

[1] Cited from Sanderson and Dorn, *Relation of Density of Population to Family*, p. 72, by John Dollard, *Changing Functions of the American Family*, Ph. D. Thesis, University of Chicago (Chicago, 1931).

Since apartments are, as we have indicated above, usually smaller than single-family units and since apartment houses have tended to grow up primarily in central metropolitan cities [11] and their satellites rather than in cities outside metropolitan areas (even of the larger size), it may be deduced that the dwelling units in major metropolitan centers are likely to be smaller than those in other types of urban settlements. This seems to be consistent (1) with the general proposition that changes in mode of life, etc., are usually initiated in metropolitan centers and are then diffused outward; and (2) with the observation made by Prof. Paul Nystrom regarding the persistence of the large single-family dwelling unit as an outward "badge of the standard of living" in smaller cities.[12] It is, moreover, in accord with the correlation between the concentration of personnel rendered necessary by the economic functions of the metropolitan center and the trend toward multifamily dwelling construction which was already referred to above.

Until the end of the last century, there was probably a quite direct relationship between the size of the dwelling unit and the social-economic status of the occupants.

[6] Bureau of Labor Statistics, Department of Labor, *Cost of Living in the United States* (Washington, 1924), p. 333.

[7] A. G. Hinman, An Inventory of Housing in a Suburban City, *Journal of Land and Public Utility Economics*, VII (1931), p. 174, cited by McKenzie, *op. cit.*, p. 220.

[8] Adams and Heydecker, *op. cit.*, p. 238.

[9] A. F. Bemis, *The Evolving House* (Cambridge, 1934), pp. 53, 54.

[10] *Ibid.*, p. 53.

[11] From 1921 to 1929, the permits for multifamily buildings in the 14 largest cities with populations of 500,000 or more increased from 34.0 to 64.4 percent of the total. Changes for other types or urban communities were as follows:

| Number, type, and population of cities | 1921 | 1929 |
|---|---|---|
| 31 central metropolitan cities | 30.3 | 58.4 |
| 57 surburban cities (population 75,000 or more) | 25.3 | 47.5 |
| 46 independent cities (population 100,000 or more) | 11.2 | 19.9 |
| 65 independent cities (population 50,000 to 100,000) | 8.8 | 15.9 |
| 64 independent cities (population 25,000 to 50,000) | 10.1 | 10.4 |

From an unpublished appendix prepared for the Report of the Committee on Family Types and Community Relations as Determining Housing Needs, by Robert Whitten. Cited by R. D. McKenzie, *The Metropolitan Community* (New York: 1933), p. 218.

[12] Paul H. Nystrom, *Economic Principles of Consumption* (New York, 1929), p. 351.

In more recent years, despite a decreasing emphasis on the practical and honorific value of the large house with its spacious and imposing yard, etc., and a general decrease in the size of the dwelling unit which affects all strata, this relationship is shown still to obtain on the basis of an analysis of the Real Property Inventory. Mr. David Wickens says:

> The principal factor in determining the difference in size of dwelling units is the family income of the occupants. Both owner and tenant families, when classified on the basis of their annual incomes, show an increasing average of rooms as the size of family income increases. Tenants show consistently fewer rooms per family than do owner occupiers even when within the same income group. This may be illustrated by the city of Peoria, Ill., where the owner families with incomes between $1,000 and $1,500 averaged 5.6 rooms and tenant families in the same income group averaged 4.8 rooms.[13]

The factors cited in the section dealing with the growth of apartment-house dwellings are all relevant here since in general the increase in apartment-house dwellings is only another aspect of the trend towards a smaller dwelling unit. The decline in the size of the family, the decrease in the number of family functions carried on in the household, the economic necessity of a greater population density to meet land costs, etc., are valid also as reasons for the changes in residential forms.

In consequence of the increasing need for compactness, as well as because of changing tastes and customs, it is in point to mention, as supplementary to the changes indicated above (e. g., the disappearance of the guest room), such changes as the merging into one room of the living and dining room, and of the dining room and kitchen into the kitchenette; the disappearance of the old-fashioned parlor; the use of furniture which is convertible from one use to another, such as beds which serve also in the place of the old-fashioned sofa, and tables and beds which can be folded into the wall; the supplanting of the breakfast room by the breakfast nook; the decline in the custom of providing a home for the servants in favor of having them come to work every day from their own homes; the increase in restaurant use; and the growth of apartment hotels which supplement all the conveniences of the apartment with maid-service, thus eliminating the necessity of employing domestic help directly.

It is interesting to speculate about the probable size of dwelling units in the future and the influence which this will manifest on the life of the family. Regarding the former, it seems very likely that a certain stabilization will take place. There does not seem to be any reason to expect a reversal of the recent trend, due primarily to the likelihood of the continuation, for reasons cited above, of the upward trend in multi-family dwellings which cannot of necessity allow for the great "wastage" of space which characterized the older one-family house; nor is it easy to envisage any development in family life in the near future which will set up a demand for larger quarters; the family is hardly likely to increase in size, and indeed the decreasing number of children under 5 years of age may even lead to an increased use of smaller units by families which formerly occupied larger ones. The increasing number of married couples with only one child or without children will probably contribute to this tendency.

Furthermore, present developments give no reason to look forward to a restoration to the family of those functions which it has lost in the past few generations. It has now become impossible for the person cooking for a single family to compete with the commercial manufacture and preparation of foods—especially when the time and effort involved in cooking are contrasted with the easy availability of prepared foods and the consequent addition which they make to the woman's leisure time or opportunity to pursue an independent career. Of course it is possible that the restriction of opportunities on the labor market in the coming years will place women at such a disadvantage that they will seek once more to exercise the household arts on a scale comparable to that practiced by the older generation of housewives. But even if the former condition is realized, the latter still remains a remote possibility, especially remote if one thinks of the vast variety of domestic activities which now seem almost irretrievably lost to the factory.

Concerning the space needs of the family for recreational purposes, conclusive and comprehensive data are lacking. For that reason the analysis cannot go beyond random observations. In the first place, it would seem as though the radio acts as a counterpendent to the moving picture and the automobile as a factor which holds family recreation in the home. At the same time radio ownership is so widespread and tends to such an extent to focus attention on "outside" objects while at the same time keeping the family in the home, that it probably decreases interfamilial visiting and thus operates, at least in this regard, in the same direction as the automobile and the moving picture. Since interfamilial visiting is one of the family recreational functions which create a demand for additional room, it is difficult to see how the trends in this sphere of technological development will lead to standards requiring greater spaciousness. Another impulse in the same direction comes from the "community planning" of recreation and leisure time activity, with emphasis on joint participation in projects carried on in settlement houses, clubs, and community centers.

[13] D. L. Wickens, Further Results of the Financial Survey of Urban Housing, *Journal of Land and Public Utilities*, XII (February 1936), p. 61.

## Materials of Construction

Until quite recent years, the materials entering into the construction of the American home have remained relatively the same over a period of about a hundred years—wood, brick, stone, cement, and plaster continued for a long time to be staple materials of residential construction. A survey conducted by the Department of Commerce in 1923–25 found that 80 percent of all dwellings in communities with over 2,500 inhabitants and 90 percent in communities of less than 2,500 were made of wood. Only three States had fewer than 55 percent of their dwellings of wood. More recently, the Real Property Inventory, surveying 64 cities, 59 of which were over 25,000, found that 82 percent of the residential buildings surveyed were of wood, the larger cities tending to have a larger proportion of wooden dwellings than the smaller ones.

A substantial proportion of our homes date from the pre-World War period when lumber was the cheapest building material and was easily accessible.

Since that period, however, there has been a movement away from wood towards a variety of other materials, especially brick, cement, stucco, steel-reinforced concrete, and terra cotta. Although frame construction still occupies an important position, it seems to be losing ground steadily. Thus, for example, in 20 cities surveyed from 1920 to 1930 by the Continental Mortgage Guarantee Co. of New York, the number of frame buildings increased 26.5 percent while the nonframe ones increased by 73.4 percent.[14] Although it might be said that the same general types of materials [15] are still being used, their proportions and the forms in which they are fabricated (e. g., plyboard and processed wood shavings) are changing. Copper, brass, aluminum, gypsum, and asbestos are also being used to a greater extent than in the past, but it is probably true that wood still remains the major construction material.

Table 33. compiled by the National Lumber Manufacturers' Association, shows the trends in the production of various types of building materials utilized in the United States from 1923 to 1929.

Shifts in type of material are also occurring in the specific units of residential construction. Thus, steel and aluminum window frames and sashes are beginning, especially in multifamily dwellings of the more expensive type, to take the place of the old-style wooden ones; wallboard is tending to replace plaster as a base for wallpaper, and in many cases painted wallboard even does away with wallpaper entirely; metal is taking the place of the wooden lath as a base for plaster; brass pipes replace iron and lead; to a very limited extent concrete floor beams are replacing wood and steel ones, although this trend is probably negligible as compared with the trend toward steel beams in place of wooden ones. With respect to the major units of the dwelling structure, composition flooring is making slight inroads on the various types of wooden flooring; precast concrete cinder blocks are also being used in place of stone, brick, or wood; there has even been experimentation with poured concrete structures, although this has not yet passed the experimental stage.

Changes in the type of material are being accompanied by changes in the technique of assembly and in the form in which the materials themselves are fabricated. The trend from fabrication on the site of assembly to fabrication at a central plant has not yet gone very far, although there have been a considerable number of attempts and much discussion concerning its possibilities. Prefabrication, by which is meant the manufacture of the various parts of the residential unit into a more or less finished form requiring only to be set up and installed on the site of the dwelling, does not as such necessarily involve departure from the use of wood as the chief material of construction, but it does favor to a certain extent the use of such materials as can quite easily be fashioned in larger units, thus simplifying the problems of assembly.

Up to the present, prefabricated residences are still quite rare, although they are being commercially produced. One such company offers a prefabricated house

TABLE 33.—*Trends in the production of various types of building materials utilized: 1923–29* [1]

[1919=100 unless otherwise indicated]

| | 1919 | 1923 | 1925 | 1926 | 1927 | 1928 | 1930 |
|---|---|---|---|---|---|---|---|
| Softwood lumber | 100 | 113 | 116 | 111 | 104 | 103 | ------ |
| Hardwood lumber | 100 | 88 | 93 | 91 | 85 | 81 | ------ |
| Oak flooring | 100 | 298 | 453 | 475 | 434 | 438 | 330 |
| Maple flooring | 100 | 117 | 88 | 96 | 95 | 78 | 65 |
| Wood shingles | 100 | 82 | 80 | 65 | 70 | 61 | ------ |
| Roofing—tile | 100 | 246 | 318 | 434 | 391 | 373 | 393 |
| Prepared roofing | 100 | 122 | 131 | 128 | 136 | 146 | 150 |
| Building stone | 100 | 207 | 240 | 262 | 249 | 246 | 265 |
| Common brick | 100 | 153 | 159 | 158 | 149 | 135 | 119 |
| Face brick | 100 | 244 | 313 | 308 | 305 | 305 | 268 |
| Sand lime brick | 100 | 145 | 215 | 225 | 218 | 213 | ------ |
| Hollow building tile | 100 | 162 | 181 | 176 | 177 | 171 | 178 |
| Architectural terra cotta | 100 | 215 | 267 | 254 | 233 | 236 | 187 |
| Floor and wall tile | [2] 100 | 184 | 176 | 212 | 205 | 228 | 217 |
| Portland cement | 100 | 170 | 200 | 204 | 214 | 218 | 211 |
| Wood lath | 100 | 193 | 183 | 179 | 138 | 110 | ------ |
| Metal lath | 100 | 270 | 422 | 450 | ------ | ------ | ------ |
| Wall plaster, wall board, and floor composition | 100 | 275 | 338 | ------ | 312 | ------ | 259 |
| Gypsum | 100 | 196 | 235 | 233 | 221 | 211 | 207 |
| Gypsum plasterboard | [2] 100 | 219 | 354 | 403 | 796 | 807 | 756 |
| Gypsum wallboard | [2] 100 | 266 | 570 | 653 | 559 | 619 | 706 |
| Gypsum partition tile | [2] 100 | 206 | 377 | 355 | 354 | 335 | 340 |
| Fiber board (Celotex) | [3] 100 | 281 | 1,125 | 1,833 | 2,917 | ------ | ------ |

[1] Reproduced in Albert F. Bemis, *The Evolving House* (Cambridge, Mass., 1934), II, p. 53.

[2] 1921=100.

[3] 1922=100.

It should be noted that these figures refer to the production of materials and not to their use for residential buildings.

[14] Bemis, *op. cit.*, p. 57.

[15] Although, as in the case of wood, they too are undergoing certain internal changes.

having a floor space under the roof of 900 square feet, including two bedrooms, bath, living room, kitchen, and utility room (but without basement) for $4,200, including installation, as well as a complete automatic oil heating system, winter air-conditioning, forced draft ventilation, kitchen cabinets, and insulation, etc.[16] In 1936 one manufacturer of prefabricated houses offered to supply a five-room house, including two bedrooms and a utility room, insulation, automatic oil-burning furnace, conditioned hot air, forced ventilation, and kitchen cabinets, etc., already erected for $3,300, exclusive of land costs.

How far prefabricated houses will succeed in attaining general acceptance is dependent on many factors among which should be mentioned: (1) Experts are by no means agreed that prefabricated houses can be built any more cheaply than houses assembled in the more traditional way unless, of course, it is possible to produce them on a mass-production scale which will allow economies characteristic of that mode of production; (2) present-day building codes constitute a certain obstacle since they usually require inspection of the work on the site of erection; (3) building-trades unions are not likely to be sympathetic with any innovations which will reduce the amount of work they might do, and since many of the prefabrication schemes include the installation of electrical, plumbing, heating, and ventilation fixtures in the factory rather than on the site of erection, it would seem as though employment possibilities are being taken away from building-trades workers; (4) purchasers of homes may be reluctant to forego individuality in external appearance for the sake of decreased expenditures, although the great body of the population has never had much opportunity to exercise a free choice regarding the form of the houses which they have occupied.

The possible future popularity of prefabricated houses will probably not change the trend away from the use of wood in those aspects of residential construction in which it was formerly used almost exclusively. Increasing attention to and higher standards of fireproofing in city building codes and in municipal housing laws, as well as the upward trend of multifamily construction in which wood is used much less than in the single-family house, will probably exercise a considerable influence in the near future.

## Conveniences

In the sphere of material conveniences, the American household is second to none in the world. European visitors during the twenties often pointed to America's great advances in material well-being, as evidenced by the plumbing, heating, and electrical facilities in the home. There can be no doubt that these observers were in the main correct, although they often overlooked the tremendous gap existing between the level attained in the cities and that in rural areas. Thus, whereas 76.7 percent of all dwelling units in 64 cities surveyed by the Real Property Inventory had either bathtub or shower (cf. table 34), there was only 1 State in the United States where as many as 68 percent of the farm homes had bathtubs, while in only 9 other States did 25 percent of the farm buildings have such a convenience. Even in urban areas, however, the present favorable condition has been a relatively late development as is shown by table 35. Because of this steady increase, which is based on the fact that practically

TABLE 34.—*Percentage of dwellings having certain household conveniences* [1]

[64 cities, Real Property Inventory, 1934]

| | Total | Owner-occupied dwellings | Rented dwellings |
|---|---|---|---|
| Mechanical refrigeration | 17.0 | 21.0 | 14.4 |
| Lighting by— | | | |
| Gas | .2 | .2 | .2 |
| Electricity | 90.6 | 95.4 | 87.5 |
| Cooking by— | | | |
| Gas | 69.4 | 72.7 | 67.3 |
| Electricity | 3.9 | 5.3 | 3.0 |
| Indoor water closets | 82.9 | 86.8 | 80.4 |
| Bath | 76.7 | 83.8 | 72.1 |

[1] *Real Property Inventory*, Bureau of Foreign and Domestic Commerce, Department of Commerce (Washington, D. C., 1934).

TABLE 35.—*Number of stationary bathtubs compared with total nonfarm population 1913–28* [1]

| Year (January) | Estimated nonfarm population (in 1,000's) [2] | Homes equipped with stationary bathtubs [3] | |
|---|---|---|---|
| | | Total number (in 1,000's) | Number per 1,000 nonfarm population |
| 1913 | 64,545 | 7,066 | 109.5 |
| 1914 | 66,534 | 7,520 | 113.0 |
| 1915 | 68,021 | 8,004 | 117.7 |
| 1916 | 69,376 | 8,540 | 123.1 |
| 1917 | 70,941 | 9,123 | 128.6 |
| 1918 | 72,223 | 9,501 | 131.6 |
| 1919 | 72,905 | 9,722 | 133.4 |
| 1920 | 74,097 | 10,116 | 136.6 |
| 1921 | 75,832 | 10,702 | 141.1 |
| 1922 | 77,615 | 11,175 | 144.0 |
| 1923 | 79,238 | 12,028 | 151.8 |
| 1924 | 81,316 | 13,059 | 160.6 |
| 1925 | 83,055 | 14,150 | 170.4 |
| 1926 | 84,704 | 15,410 | 181.9 |
| 1927 | 86,297 | 16,545 | 191.7 |
| 1928 | 87,910 | 17,591 | 200.1 |

[1] Adapted from Leo Wolman, "Consumption and Standard of Living," *Recent Economic Changes in the United States* (New York, 1929), p. 67.

[2] Based on W. I. King's estimates of total population and census figures of farm population (1920 and 1925).

[3] Estimated on percentage of homes having stationary tubs as determined by *Urban Home Equipment Survey* of General Federation of Women's Clubs and shipments of enameled baths.

[16] National Resources Committee report, *Technological Trends and National Policy*; Part III, Section IX, "The Construction Industries," prepared under the direction of Lowell J. Chawner (Washington: Government Printing Office, 1937), p. 372.

every new urban dwelling unit built in the past decade has had either a bathtub or shower installed at the time of erection, only the older structures are still without them. Due in part to the American housing custom of "moving up" and leaving the older houses to the lower economic strata and in part to the fact that a great many such houses in the large cities were built to accommodate the newly arrived immigrants, these tubless and showerless houses are almost exclusively occupied by the lower income groups. This is revealed most clearly by table 36, based on Real Property Inventory data.

The demonstration of this relationship may be assumed to hold equally for other cities as well, within

TABLE 36.—*Percentage distribution of bathtubs or showers by income classes in selected cities: 1933*

| | Total family | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000 + |
|---|---|---|---|---|---|---|---|---|---|---|
| TRENTON, N. J. | | | | | | | | | | |
| Total families reporting | 3,707 | 8.0 | 19.7 | 27.5 | 20.6 | 10.7 | 9.0 | 3.3 | 0.9 | 0.3 |
| None | 484 | 19.8 | 34.7 | 27.1 | 14.3 | 3.1 | .6 | .4 | 0 | 0 |
| 1 | 3,191 | 6.3 | 17.5 | 27.8 | 21.7 | 11.9 | 10.2 | 3.5 | .9 | .2 |
| 2 | 28 | 0 | 3.6 | 7.1 | 17.9 | 7.1 | 21.5 | 25.0 | 10.7 | 7.1 |
| 3 or more | 4 | 0 | 0 | 0 | 0 | 25.0 | 0 | 0 | 25.7 | 50.0 |
| SALT LAKE CITY, UTAH | | | | | | | | | | |
| Total families reporting | 6,528 | 3.6 | 22.2 | 23.0 | 20.0 | 13.9 | 10.7 | 5.0 | 0.9 | 0.7 |
| None | 584 | 10.3 | 52.9 | 24.0 | 9.7 | 2.7 | .2 | .2 | 0 | 0 |
| 1 | 5,767 | 3.0 | 19.7 | 23.3 | 21.3 | 15.2 | 11.4 | 5.0 | .7 | .4 |
| 2 | 166 | 2.4 | 4.8 | 10.9 | 9.6 | 9.0 | 20.5 | 24.1 | 8.4 | 10.3 |
| 3 or more | 11 | 0 | 0 | 9.1 | 0 | 9.1 | 9.1 | 9.1 | 18.2 | 45.4 |
| COLUMBIA, S. C. | | | | | | | | | | |
| Total families reporting | 1,697 | 2.6 | 38.1 | 20.5 | 10.5 | 9.7 | 9.5 | 7.0 | 1.3 | 0.8 |
| None | 686 | 3.9 | 72.3 | 20.7 | 2.6 | .3 | .2 | 0 | 0 | 0 |
| 1 | 892 | 1.8 | 16.4 | 22.5 | 16.3 | 16.7 | 14.9 | 10.0 | .9 | .5 |
| 2 | 103 | 0 | 2.9 | 4.9 | 14.6 | 11.6 | 24.3 | 25.2 | 8.7 | 7.8 |
| 3 or more | 16 | 6.3 | 6.3 | 6.3 | 0 | 6.2 | 18.7 | 25.0 | 25.0 | 6.2 |
| PORTLAND, MAINE | | | | | | | | | | |
| Total families reporting | 3,097 | 2.2 | 12.1 | 20.4 | 23.7 | 17.2 | 14.3 | 6.9 | 1.5 | 1.2 |
| None | 387 | 5.2 | 32.8 | 30.5 | 19.1 | 8.0 | 3.1 | 1.3 | 0 | 0 |
| 1 | 2,627 | 1.9 | 9.3 | 19.4 | 24.9 | 18.8 | 16.5 | 7.1 | 1.5 | .6 |
| 2 | 54 | 0 | 1.8 | 5.6 | 3.7 | 14.8 | 18.5 | 29.6 | 9.3 | 16.7 |
| 3 or more | 29 | 0 | 6.9 | 0 | 13.8 | 0 | 6.9 | 24.1 | 6.9 | 41.4 |
| FARGO, N. DAK. | | | | | | | | | | |
| Total families reporting | 1,403 | 3.6 | 12.1 | 18.7 | 21.5 | 17.1 | 16.8 | 8.1 | 1.6 | 0.5 |
| None | 172 | 4.7 | 33.1 | 34.3 | 22.1 | 4.1 | 1.7 | 0 | 0 | 0 |
| 1 | 1,202 | 3.5 | 9.3 | 16.5 | 21.6 | 19.0 | 18.9 | 9.1 | 1.7 | .4 |
| 2 | 25 | 4.0 | 0 | 20.0 | 12.0 | 20.0 | 24.0 | 12.0 | 4.0 | 4.0 |
| 3 or more | 4 | 0 | 0 | 0 | 25.0 | 0 | 0 | 25.0 | 25.0 | 25.0 |

TABLE 36.—*Percentage distribution of bathtubs or showers by income classes in selected cities: 1933*—Continued

| | Total family | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000 + |
|---|---|---|---|---|---|---|---|---|---|---|
| AUSTIN, TEX. | | | | | | | | | | |
| Total families reporting | 1,697 | 2.7 | 22.3 | 23.2 | 17.7 | 12.1 | 11.2 | 7.8 | 2.1 | 0.9 |
| None | 371 | 2.7 | 59.0 | 31.5 | 4.3 | 1.4 | .6 | .3 | 0 | 0 |
| 1 | 1,221 | 2.5 | 12.6 | 22.0 | 22.3 | 15.8 | 14.0 | 8.7 | 1.6 | .5 |
| 2 | 90 | 4.4 | 7.8 | 5.6 | 13.3 | 7.8 | 16.7 | 22.2 | 15.5 | 6.7 |
| 3 or more | 15 | 0 | 0 | 20.0 | 0 | 0 | 6.7 | 40.0 | 13.3 | 20.0 |
| BIRMINGHAM, ALA. | | | | | | | | | | |
| Total families reporting | 9,119 | 5.1 | 36.7 | 20.4 | 14.8 | 10.6 | 7.9 | 3.3 | 0.9 | 0.3 |
| None | 2,887 | 8.0 | 71.9 | 15.7 | 2.7 | 1.2 | .3 | .1 | .1 | 0 |
| 1 | 5,891 | 3.8 | 21.1 | 23.0 | 20.7 | 15.0 | 10.9 | 4.4 | .8 | .3 |
| 2 | 294 | 1.7 | 6.5 | 15.3 | 17.7 | 13.6 | 22.1 | 12.2 | 9.5 | 1.4 |
| 3 or more | 47 | 6.4 | 4.3 | 8.5 | 10.6 | 14.9 | 12.8 | 19.1 | 19.1 | 4.3 |

From Department of Commerce, Bureau of Foreign and Domestic Commerce, *Consumer Use of Selected Goods and Services by Income Classes* (Washington, D. C., 1935–36), Market Research Series No. 5; 1, 2, 3, 4, 5, 6, 9.

TABLE 37.—*Number and percent of owner-occupied and rented dwelling units without baths, by geographic divisions: 1934* [1]

| Geographic division | Owner occupied | | Rental | |
|---|---|---|---|---|
| | Number without baths | Percent of total | Number without baths | Percent of total |
| Total | 167,964 | 16.21 | 445,013 | 27.86 |
| New England | 16,290 | 14.81 | 44,229 | 22.78 |
| Middle Atlantic | 9,153 | 11.01 | 17,492 | 17.05 |
| East North Central | 29,684 | 13.20 | 76,531 | 22.63 |
| West North Central | 31,994 | 18.06 | 55,347 | 24.65 |
| South Atlantic | 26,740 | 23.78 | 98,582 | 42.68 |
| East South Central | 15,882 | 34.55 | 62,913 | 58.00 |
| West South Central | 15,206 | 19.97 | 45,550 | 32.61 |
| Mountain | 9,155 | 18.58 | 17,203 | 26.23 |
| Pacific | 13,860 | 8.83 | 27,166 | 14.00 |

[1] Taken from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory* (Washington, D. C., 1934).

the limits, however, of certain independent variables such as region and size of city. A glance at table 37 shows that the cities in the Pacific Coast and the Middle Atlantic States are in general superior in this respect to those in the East North Central, and the New England States follow close behind. These areas are the most industrialized and have shown the greatest population growth during the post-war period as compared with other regions. Since the rate of new construction bears some relationship to population growth, it is likely that in these regions more new dwelling units were constructed during a period when it had already become customary to install a bathtub in each residential unit. It should furthermore be pointed out that standards of living and income (even for the lower economic strata) are higher in areas of

greater urban agglomeration, and accordingly it seems likely that the purchasers making up the market for dwelling units in the four regions mentioned above were better able to afford dwellings with bathtubs among other conveniences than persons living in less urbanized areas. Nor should it be overlooked that there still remain even in the region with the best showing (the Pacific) at least 10 percent which do not have bathtubs or showers (8.83 percent of owner-occupied units; 14 percent of rental units). This serious margin makes it possible to insist that, although largely urbanized areas are better equipped than less urbanized areas as regards housing conveniences, a large section of their population still remains without these necessary conveniences.

The relationship between urbanization and housing conveniences can be seen more precisely in column 3 of table 38 from which it becomes clear that the larger the city the greater the percentage of dwelling units supplied with tubs or showers. Table 38 (column 3) indicates a direct relationship between degree of industrialization and proportion having tubs or showers. The following data enable us to see how large a part of the population of a number of leading cities in the section of the country having the highest standards are still without these conveniences which have always been regarded as an integral part of the "American standard of living." [17]

| | *Percent* |
|---|---|
| New York City | 11.4 |
| Boston, Mass | 16.2 |
| Newark, N. J | 19.7 |
| Jersey City, N. J | 19.4 |
| Paterson, N. J | 20.4 |
| Trenton, N. J | 16.8 |
| Camden, N. J | 18.7 |
| Elizabeth, N. J | 17.5 |
| Passaic, N. J | 25.9 |
| Perth Amboy, N. J | 25.6 |

Even more fundamental to satisfactory living, according to modern standards and under modern conditions, is an ample supply of hot and cold water readily available within each dwelling unit. It is here too that we can see how much closer life in the urban community measures up to modern standards than does that of the rural areas. In the mere availability of running water only about 15.8 percent of the rural houses were so supplied in 1930 as contrasted with about 95 percent of the urban dwelling units. It seems, furthermore, on the basis of the Real Property Inventory sample, as if in general the greater the degree of urbanization of a community from the point of view of size, the greater are the chances that (cf. table 38, column 2) it will be supplied with running water. There seems similarly to be a direct relationship between the degree of industrialization of a city and the percentage of its dwelling units which have running water. It is rather difficult to account for this in view of the fact that dwelling units without running water are in almost all cases those occupied by the lower economic strata, which are usually more highly represented in industrial than in nonindustrial cities. A larger sample would be necessary to establish more definitely the existence or the degree of generality of this relationship.

A more differentiated and advanced type of convenience is one in which hot water as well as cold water is supplied. Here, naturally, the proportion of homes lacking this convenience is much greater than that of homes which have no running water at all. In the 64 cities covered by the Real Property Inventory, more than one-fourth of the homes supplied with water had only cold water, 67 percent of the total having both hot and cold. While no precise data are available which would allow a comparison between rural and urban homes in this respect, it seems safe to say that the percentage of rural homes supplied with both hot and cold water is very small (if we can assume that the ratio of homes having hot and cold water to all those having water is no greater for rural than it is for urban areas) (cf. table 38). How great the proportion of homes without these elementary conveniences is, even in the largest cities which are most advanced in these respects, may be grasped from the fact that in New York City 11.8 percent, in Boston 12.8 percent, in Cleveland 11.9 percent, in Indianapolis 24.9 percent, in Atlanta, Ga., 47.2 percent of all dwelling units are without hot

TABLE 38.—*Distribution of plumbing facilities in dwelling units, by city size groups and by degree of industrialization*

| Size of city | Percent dwelling units without water | Percent dwelling units having neither tub nor shower | Percent dwelling units having hot and cold water | Percent dwelling units having no indoor water closets |
|---|---|---|---|---|
| 10,000 to 25,000 | 4.00 | 28.0 | 70.0 | 24.0 |
| 25,000 to 50,000 | 7.00 | 25.0 | 68.13 | 19.0 |
| 50,000 to 100,000 | 8.33 | 25.6 | 65.0 | 18.0 |
| 100,000 to 250,000 | 4.00 | 18.0 | 79.2 | 19.0 |
| 250,000 to 500,000 | 3.00 | 18.0 | 78.75 | 4.5 |
| 500,000 and over | [1] 1.00 | [1] 10.0 | [1] 87.5 | [1] 2.0 |
| Percent employed in manufacturing and mechanical industries: | | | | |
| 5 to 14.99 | [1] 29.00 | [1] 49.50 | [1] 27.50 | [1] 43.50 |
| 15 to 24.99 | 6.00 | 28.50 | 61.25 | 18.75 |
| 25 to 34 | 6.80 | 25.50 | 70.00 | 17.25 |
| 35 to 44 | 4.00 | 22.50 | 67.50 | 18.75 |
| 44 to 54 | 1.00 | 14.25 | 82.50 | 4.50 |
| 55 to 64 | [1] 1.00 | [1] 10.50 | [1] 77.50 | [1] 1.50 |

[1] 1 city.

Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory 1934* (Washington,, D. C., 1935).

[17] *Real Property Inventory of New York, 1934, Real Property Inventory for the City of Boston, 1934; Real Property Inventory of the New Jersey State Housing Authority* (adapted from E. E. Wood, "Slums and Blighted Areas," Bull. No. 1 of the Housing Division of the Federal Emergency Administration of Public Works (Washington, 1935).

water.[18] (This does not include those having no water at all.)

Approximately the same condition obtains with reference to another fundamental sanitary convenience, i. e., the indoor flush toilet. A private indoor flush toilet for each family unit is coming to be widely accepted as a part of a reasonable minimum housing standard. A large number of municipal dwelling laws have incorporated this standard in a legal form. Nonetheless, in 64 cities (Real Property Inventory) 17.1 percent were lacking this convenience. As usual, the New England, Middle Atlantic, East North Central, and Pacific States are considerably better off than the rest, with the South Atlantic and the East South Central States being worst off (cf. table 39). Likewise in accord with the positive relationship between home ownership and income, we find that it is the lower income groups which are less fortunately situated, since in every region except New England owner-occupied units are better equipped than rented ones.

TABLE 39.—*Number and percent of dwelling units having indoor water closets in owner-occupied and in rented dwellings, by geographic divisions, 1934* [1]

| Geographic division | Owner occupied | | Rental | |
|---|---|---|---|---|
| | Number without indoor water closet | Percent of total | Number without indoor water closet | Percent of total |
| Total | 137,016 | 13.23 | 312,611 | 19.57 |
| New England | 9,829 | 8.94 | 15,538 | 8.00 |
| Middle Atlantic | 6,583 | 7.92 | 8,841 | 8.62 |
| East North Central | 21,042 | 9.36 | 45,902 | 13.57 |
| West North Central | 26,517 | 14.97 | 42,351 | 18.87 |
| South Atlantic | 24,596 | 21.87 | 77,548 | 33.57 |
| East South Central | 12,358 | 28.89 | 44,308 | 40.84 |
| West South Central | 15,514 | 20.87 | 40,399 | 28.92 |
| Mountain | 8,287 | 16.82 | 14,950 | 22.80 |
| Pacific | 12,290 | 7.83 | 22,774 | 11.73 |

[1] Taken from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory* (Washington, D. C., 1934).

Rural-urban differences are of course great. Only in 12 States do more than 20 percent of the farm homes covered by the Farm Housing Survey have indoor flush toilets, while in the 64 Real Property Inventory cities which contain 14.2 percent of the urban population of the United States, 82.9 percent of all dwelling units are so equipped.

In this category too there are significant differences among cities. Thus there is a definite decrease in the percentage of homes lacking indoor toilets as we pass from smaller to larger cities. Likewise there is an increase in the frequency of this convenience with increase in degree of industrialization (cf. table 38, column 5).

[18] Department of Commerce, *Real Property Inventory, 1934; Real Property Inventory of New York, 1934; Real Property Inventory of the City of Boston, 1934.*

#### Lighting Facilities

Turning now to the status of American housing with regard to lighting facilities, we find that the use of electricity has gained steadily in the past quarter of a century until, for the urban population at least, it has become the chief source of illumination. Its great growth from 1913 to 1928 in nonfarm areas may be seen in table 40. By 1932 the number of nonfarm homes supplied with electricity was approximately 19,750,000,[19] or about 85 percent of the total. In 1934 almost 91 percent of the dwelling units in the 64 Real Property Inventory cities were lighted by electricity (of the owner-occupied homes 95.4 percent and of the rented ones 87.5 percent were wired). Pronounced regional differences are evident. The East North Central, New England, Middle Atlantic, and Pacific, which are the most urbanized, lead all the others, the West North Central and the Southern States following in the order named (table 41). Among the owner-occupied homes, the leading regions are only slightly short of 100 percent. The rented dwellings, however, are not very far behind in those regions. The gap between owned and rented homes is greatest in those regions

TABLE 40.—*Number of wired homes compared with total nonfarm population, 1913–28* [1]

| Year (Jan. 1) | Estimated [2] nonfarm population | Wired homes (domestic electric light and power customers) | |
|---|---|---|---|
| | | Total number [3] | Number per thousand nonfarm population |
| | *Thousands* | *Thousands* | |
| 1913 | 64,545 | 3,101 | 48.0 |
| 1914 | 66,534 | | |
| 1915 | 68,021 | | |
| 1916 | 69,376 | | |
| 1917 | 70,941 | 4,260 | 74.1 |
| 1918 | 72,223 | 5,800 | 80.3 |
| 1919 | 72,905 | 6,900 | 94.6 |
| 1920 | 74,097 | 8,010 | 108.1 |
| 1921 | 75,832 | 8,700 | 114.7 |
| 1922 | 77,615 | 9,430 | 121.5 |
| 1923 | 79,238 | 10,211 | 128.9 |
| 1924 | 81,316 | 11,819 | 145.3 |
| 1925 | 83,055 | 13,567 | 163.3 |
| 1926 | 84,704 | 14,965 | 176.7 |
| 1927 | 86,297 | 16,359 | 189.6 |
| 1928 | 87,910 | 17,596 | 200.2 |

[1] Adapted from *Recent Economic Changes in the United States.* Report of the Committee on Recent Economic Changes of the President's Conference on Unemployment, vol. I (New York, 1929), p. 67.

[2] Based on W. I. King's estimates of total population and census figures of farm population (1920 and 1925).

[3] Compiled and estimated by G. F. Wittig, statistical editor, *Electrical World* (Jan. 7, 1928), p. 32.

[19] Adapted from Bemis, *op. cit.*, p. 64, data supplied by National Electric Light Association.

TABLE 41.—*Number and percent of owner-occupied and of rented dwellings having lighting facilities in 64 cities, by geographic divisions, 1934* [1]

| Geographic division | Lighting | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Owner occupied | | | | Rented | | | |
| | Gas | | Electricity | | Gas | | Electricity | |
| | Number | Percent of total | Number | Percent of total | Number | Percent of total | Number | Percent of total |
| Total | 2,185 | 0.21 | 988,514 | 95.42 | 3,825 | 0.24 | 1,397,362 | 87.49 |
| New England | 175 | .16 | 107,696 | 97.91 | 624 | .32 | 186,513 | 96.08 |
| Middle Atlantic | 210 | .25 | 81,340 | 97.82 | 408 | .40 | 97,505 | 95.07 |
| East North Central | 334 | .15 | 220,598 | 98.11 | 815 | .24 | 319,963 | 94.60 |
| West North Central | 314 | .18 | 171,415 | 96.78 | 549 | .24 | 211,589 | 94.26 |
| South Atlantic | 592 | .53 | 100,517 | 89.18 | 772 | .33 | 158,414 | 68.59 |
| East South Central | 62 | .13 | 38,229 | 83.18 | 51 | .05 | 64,977 | 59.90 |
| West South Central | 232 | .30 | 67,262 | 88.33 | 319 | .23 | 108,316 | 77.55 |
| Mountain | 22 | .04 | 47,644 | 96.69 | 28 | .04 | 60,926 | 92.91 |
| Pacific | 244 | .16 | 153,813 | 97.97 | 259 | .13 | 189,159 | 97.46 |

[1] Taken from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory* (Washington, D. C., 1934).

which are in general most backward. Thus, among owner-occupied homes the range is from 98.11 percent to 83.18 percent, while among rented ones it is from 97.46 percent to 59.90 percent. The urban communities are of course not all on the same level in this respect, and as usual the largest and the more industrialized cities are superior to the others.

The lighting facilities of the agricultural section of the population are, as is to be expected, considerably inferior to those obtaining in the cities. Thus in 1930 only 13.4 percent of all farms reported dwellings lighted by electricity; and although the Rural Electrification Administration is doing much to overcome this situation, it is safe to assume that it will be some time before the rural population of the United States is as well supplied with electricity as is the urban population. It should be noted that during the twenties the number of farm and nonfarm dwellings wired for electricity increased at approximately the same rate. In the coming years the rural rate of increase will undoubtedly be considerably greater than the urban rate, which will necessarily be low because in many urban areas the saturation point has almost been reached (excluding, of course, the cities in the South Atlantic and East South Central States which in some cases are scarcely better equipped than the best farming areas, e. g., Charleston, S. C., 49.8 percent; Columbia, S. C., 64.7 percent; Jackson, Miss., 64 percent; as compared with 62.5 percent for Massachusetts farm households, 58.1 percent for Utah, 53 percent for New Jersey, and 57 percent for Rhode Island). It should of course be recognized that these farm rates are far superior to the average farm rate. On the other hand, the following high rates may be regarded as representative of many cities: Boise, Idaho, 96.7; Burlington, Vt., 97.7; Butte, Mont., 97.3; Decatur, Ill., 92.4; Fargo, N. Dak., 97.5; Lansing, Mich., 98.3; Lincoln, Nebr., 97; Williamsport, Pa., 93.1; Binghamton, N. Y., 97.9; Cleveland, 97.4; Erie, Pa., 98.3; Kenosha, Wis., 98.4; Minneapolis, 98.2; Portland, Oreg., 98.2. The dwellings without electricity in cities such as these are in most cases very old ones whose demolition in the next decade can be expected. When these are eliminated, it is likely that certain cities will be able to boast of almost 100 percent electrical illumination.

Those homes which are not supplied with electricity usually use gas, which prior to the inception of the general use of electricity was the chief source of light in urban America. There are, however, still a considerable number of homes which have neither gas nor electricity (9.2 percent in 64 cities in 1934). This situation is most widespread in the Southern States where, for example, 19.3 percent of the dwelling units in Asheville, N. C.; 21.2 percent in Austin, Tex.; 27.9 percent in Baton Rouge, La.; 50 percent in Charleston, S. C.; 33.6 percent in Columbia, S. C.; 35.7 percent in Jackson, Miss., are without both gas and electricity, as contrasted with the northern and western cities where the figure is rarely as high as 10 percent, most fre-

TABLE 42.—*Percentage distribution by income classes of fuels for lighting in owned and rented dwellings of white and Negro families in selected cities* [1]

| | Total | | White | | Negro | | Other | |
|---|---|---|---|---|---|---|---|---|
| | Percent | Number | Owner occupied | Tenant | Owner occupied | Tenant | Owner occupied | Tenant |
| **BIRMINGHAM, ALA.** | | | | | | | | |
| $1 to $499 income class: | | | | | | | | |
| Total families reporting | 100 | 3,344 | 14.1 | 23.6 | 11.1 | 61.2 | ------ | ------ |
| Electricity | 100 | 1,922 | 23.5 | 35.4 | 12.9 | 28.2 | ------ | ------ |
| Gas | 100 | 1 | 0 | 0 | 100.0 | 0 | ------ | ------ |
| Other | 100 | 1,421 | 1.5 | 7.7 | 8.7 | 82.1 | ------ | ------ |
| $500 to $999 income class: | | | | | | | | |
| Total families reporting | 100 | 1,859 | 26.7 | 48.0 | 6.8 | 18.5 | ------ | ------ |
| Electricity | 100 | 1,627 | 30.4 | 52.7 | 6.1 | 10.8 | ------ | ------ |
| Gas | 100 | 0 | ------ | ------ | ------ | ------ | ------ | ------ |
| Other | 100 | 232 | 1.3 | 15.1 | 11.6 | 72.0 | ------ | ------ |
| **AUSTIN, TEX.** | | | | | | | | |
| $1 to $499 income class: | | | | | | | | |
| Total families reporting | 100 | 379 | 21.6 | 25.9 | 15.8 | 24.0 | 5.0 | 7.7 |
| Electricity | 100 | 186 | 36.6 | 34.9 | 12.9 | 10.8 | 4.3 | .5 |
| Gas | 100 | 0 | ------ | ------ | ------ | ------ | ------ | ------ |
| Other | 100 | 193 | 7.2 | 17.1 | 18.7 | 36.8 | 5.7 | 14.5 |
| $500 to $999 income class: | | | | | | | | |
| Total families reporting | 100 | 394 | 30.9 | 36.3 | 12.9 | 11.2 | 4.1 | 4.6 |
| Electricity | 100 | 321 | 36.1 | 38.0 | 13.1 | 6.8 | 4.4 | 1.6 |
| Gas | 100 | 0 | ------ | ------ | ------ | ------ | ------ | ------ |
| Other | 100 | 73 | 8.2 | 28.8 | 12.3 | 30.1 | 2.8 | 17.8 |

[1] From Department of Commerce, Bureau of Foreign and Domestic Commerce, *Consumer Use of Selected Goods and Services by Income Classes* (Washington, D. C., 1935-36), Market Research Series No. 5; 1, 2, 3, 4, 5, 6, 9.

quently about 5 percent, and quite often, especially in the larger cities, only about 1 percent. In New York City only 0.34 percent of the dwelling units are without gas or electricity, and in Boston 1.5 percent are in the same category. Dwelling units without either gas or electric light are usually the residences of the impoverished Negro population of any city, and in cities where there is a relatively large Negro population the percentage of such ill-equipped dwellings is likely to be large. In view of the very low effective demand which such elements of the population are able to make for better housing, it does not seem as though the elimination of these conditions is a prospect to be realized very shortly.[20]

#### Cooking Facilities

Although electricity, despite certain serious lags, is the chief source of illumination, its use in cooking has advanced slowly. Whereas only 3.9 percent of all dwellings in the Real Property Inventory cities used electricity for cooking, 69.4 percent were supplied with gas. According to Ogburn and Tibbitts,[21] the "number of domestic consumers of manufactured and natural gas increased 41 percent from 1920 to 1930, while the number of families increased 23 percent.[22] They contrast this with the increase in domestic users of electricity which amounted to 135 percent during the same period, but fail to mention that the use of gas for cooking had already reached quite a high point by the beginning of the twenties when the widespread use of electricity for lighting was just beginning. The installation of the new service in previously unequipped dwellings went on at a much greater rate for electricity than for gas, since in many cases the kitchen stove was used for both cooking and heating, and to change to gas would have required the installation of a new heating system, inasmuch as the cost of heating by means of gas would be prohibitive. Consequently, somewhat more than one-fourth of the dwelling units in a large sample of cities still use the more old-fashioned and less-differentiated means of cooking, i. e., either the coal or wood stove or kerosene cookers.

However retarded our urban communities may appear to be from this point of view, they are still very much ahead of the rural sections of the country. Thus there were only 22 States in which at least 25 percent of the farm dwellings were supplied with either gas or electricity. Ten of these were in the New England, Middle Atlantic, and East North Central States, which are the most urbanized and industrialized. In areas where the agencies of generation or manufacture already exist in urban centers which are quite close to one another, the rural areas which separate them seem to have proportionately greater chances of sharing in the advantages which the cities are able to offer their inhabitants.

Cities are sharply differentiated regionally also. In the Western States (Mountain and Pacific) almost a sixth of the dwellings use electricity for cooking, a figure which is not even approximated by any other section of the country. Furthermore, in all other parts of the country the percent of tenants using electricity for cooking is almost negligible (table 43), nor is it very much larger for owner-occupied dwellings in the same areas. As regards the use of gas, the Middle Atlantic, West and East North Central cities have the highest rates, while the West South Central cities, where natural gas is quite inexpensive, are not far behind. It is interesting to note that the New England States are quite backward in this respect, although rather better provided than the South Atlantic and East South Central cities. Furthermore, despite their superiority in electrical cooking facilities, the Pacific and Mountain cities, when viewed with reference to equipment with either gas or electricity, are definitely inferior to the cities in the Middle Atlantic and Middle Western States. This suggests the superiority of urbanized areas in respect to the technological prerequisites for satisfactory housing. (The New England case is somewhat in contradiction with this unless we take into account that the sample of cities for New England is taken largely from the smaller

TABLE 43.—*Number and percent of owner-occupied and of rented dwellings, in 64 cities, having gas or electricity for cooking, by geographic divisions, 1934* [1]

| Geographic division | Owner-occupied | | | | Rented | | | |
|---|---|---|---|---|---|---|---|---|
| | Number having gas for cooking | Percent of total | Number having electricity for cooking | Percent of total | Number having gas for cooking | Percent of total | Number having electricity for cooking | Percent of total |
| United States | 752,902 | 72.68 | 54,782 | 5.29 | 1,075,561 | 67.34 | 47,172 | 2.95 |
| New England | 30,314 | 73.02 | 2,149 | 1.95 | 140,961 | 72.61 | 1,190 | .61 |
| Middle Atlantic | 73,590 | 88.50 | 493 | .59 | 88,420 | 86.21 | 298 | .29 |
| East North Central | 200,940 | 89.37 | 1,455 | .65 | 286,482 | 84.70 | 1,368 | .40 |
| West North Central | 146,165 | 82.53 | 3,262 | 1.84 | 182,149 | 81.14 | 1,785 | .80 |
| South Atlantic | 71,398 | 63.49 | 6,654 | 5.92 | 99,997 | 43.30 | 4,301 | 1.86 |
| East South Central | 20,946 | 45.57 | 1,037 | 2.26 | 29,332 | 27.04 | 595 | .55 |
| West South Central | 63,555 | 83.46 | 431 | .57 | 106,280 | 76.09 | 144 | .10 |
| Mountain | 17,666 | 35.85 | 9,045 | 18.36 | 29,063 | 44.32 | 6,751 | 10.30 |
| Pacific | 78,328 | 49.89 | 30,256 | 19.27 | 112,877 | 58.16 | 30,740 | 15.84 |

[1] Taken from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory* (Washington, D. C., 1934).

[20] Evidence that the southern situation is further complicated by the large Negro population may be derived from table 42 which shows the differentials in type of lighting fuel used by Negroes and whites in the same income classes.

[21] "The Family," *Recent Sociol Trends* (New York, 1933), p. 668.

[22] In January 1929, 12,970,000 families cooked with gas, 8,290,000 with coal and wood, 6,000,000 with oil, and 590,000 with electricity. The American Gas Association estimated that in 1929, 14,500,000 homes were served with gas, of which 10,800,000 were piped for manufactured gas and 3,700,000 for natural gas. In 1931 the number of domestic gas consumers had risen to 15,000,000, with natural gas now representing one-third of the total. (Cf. Paul H. Nystrom, *Economic Principles of Consumption* (New York: 1929), pp. 402-03, and Albert F. Bemis, *The Evolving House* (Cambridge, Massachusetts, 1934), pp. 63-64.

cities of that region—since certain of the States have no large cities—in which the houses are likely to be quite old.)

As is the case with regard to other facilities, the larger cities and the more industrialized ones are better provided with either gas or electric cooking facilities than other cities. This may be due to the fact that the larger cities, because of the higher economic status of their population, are better able to afford these conveniences, that the cost of these utilities may be less in larger centers, or that the larger and the more industrialized cities are not located in those parts of the country in which the population, because of its long impoverishment, has become accustomed to such a low standard of living (e. g., the South Atlantic and the East South Central States [cf. table 44]). Instances of the degree to which some of the smaller cities and those in the Southern States are without gas or electric cooking facilities can be seen in the following:

| | *Percent* |
|---|---|
| Asheville, N. C | 75. 5 |
| Baton Rouge, La | 42. 0 |
| Boise, Idaho | 48. 9 |
| Charleston, S. C | 63. 7 |
| Columbia, S. C | 58. 8 |
| Greensboro, N. C | 64. 1 |
| Paducah, Ky | 68. 6 |
| Atlanta, Ga | 45. 6 |
| Birmingham, Ala | 54. 6 |

which might be contrasted with

| | *Percent* |
|---|---|
| Cleveland | 4. 3 |
| New York City | 1. 3 |

TABLE 44.—*Distribution of facilities for lighting and cooking by city size groups and by degree of industrializotion* [1]

| City size | Percent dwellings having neither gas nor electricity for cooking | Percent dwelling units having neither gas nor electric light |
|---|---|---|
| 10,000–25,000 | 47. 5 | 6. 0 |
| 25,000–50,000 | 32. 5 | 7. 5 |
| 50,000–100,000 | 22. 5 | 8. 5 |
| 100,000–250,000 | 15. 0 | 4. 5 |
| 250,000–500,000 | 16. 6 | .3 |
| 500,000 and over | 2. 6 | 1. 5 |

| Percent employed in manufacturing and industrial industries | Percent dwelling units having electric lighting | Percent dwelling units having neither gas nor electricity for cooking |
|---|---|---|
| 5.0–14.99 | 69. 00 | 67. 50 |
| 15.0–24.99 | 81. 00 | 32. 50 |
| 25.0–34.0 | 94. 50 | 22. 50 |
| 35.0–44.0 | 94. 00 | 15. 00 |
| 45.0–54.0 | 97. 00 | 11. 25 |
| 55.0–64.0 | 99. 00 | 7. 50 |

[1] Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, D. C., 1935).

| | *Percent* |
|---|---|
| Erie, Pa | 3. 9 |
| Minneapolis, Minn | 3. 6 |
| Racine, Wis | 7. 5 |
| Sacramento, Calif | 3. 5 |
| Boston, Mass | 4. 3 |

The role that distance from the centers of generation and manufacture plays in the determination of the extent to which the population of a given community enjoys the various utilities which the city offers may be deduced from the fact that in every one of the 31 metropolitan centers and districts surveyed by the Real Property Inventory, the percentage of dwelling units without gas or electricity for cooking is definitely larger for the metropolitan districts as a whole than it is for the cities proper. The discrepancy is even greater if we compare the city proper with the environs. In table 45 the differences between the city and the entire district are listed for a number of significant household conveniences. The significance of income status as a determinant of the chances of obtaining some of the conveniences discussed above is revealed in table 46. Similar relationships undoubtedly obtain for other utilities and other cities.

#### Heating Facilities

It is difficult to delineate precisely the trends in the use of the various types of heating units, but there seems to be little doubt that there is a steady movement away from the older forms such as fireplace, base burner, kitchen stove, and kerosene stove. Fireplaces have become practically ornaments in those homes where they still are to be found and in only a negligible number of cases do they provide the chief source of heat. The fact that almost all single or row houses have been constructed with basements or cellars in the past few decades offers something of an index to the extent that provision has been made for the installation of furnaces.

The methods used in heating the homes in which the American people live also reveal the differentiations within the social structure and the varying degrees to which the different sections of the population enjoy the comforts made possible by modern technological development. In the more urbanized parts of the country, central heating, i. e., a single heating unit which supplies heat for at least all the rooms of the dwelling unit, is likely to be taken for granted, especially by those whose experience does not extend beyond the radius of middle class existence. Furthermore, central plant heat has been introduced in a number of communities, especially in well-to-do suburbs. Practically every multifamily dwelling constructed in recent years is heated by a single unit. During the twenties the use of the oil-burning furnace and the introduction of the gas furnace for home heating also

TABLE 45.—*Significant household conveniences* [1]

| City | Percent with neither hot nor cold water | | Percent with neither gas nor electricity for lighting | | Percent with neither gas nor electricity for cooking | | Percent without indoor flush toilet | | Percent without either tub or shower | |
|---|---|---|---|---|---|---|---|---|---|---|
| | M. C. C.[2] | M. D.[3] | M. C. C.[2] | M. D.[3] | M. C. C.[2] | M. D.[3] | M. C. C.[2] | M. D.[3] | M. C. C.[2] | M. D.[3] |
| Atlanta, Ga | 8.1 | 13.9 | 29.4 | 29.4 | 45.6 | 47.2 | 20.6 | 26.2 | 31.9 | 35.3 |
| Binghamton, N. Y | .4 | 2.3 | 1.8 | 2.1 | 12.9 | 17.6 | 2.0 | 4.1 | 7.8 | 9.2 |
| Birmingham, Ala | 7.4 | 15.0 | 30.5 | 33.5 | 54.6 | 63.7 | 24.7 | 38.2 | 43.8 | 52.4 |
| Cleveland, Ohio | .3 | 1.2 | 2.1 | 1.8 | 4.3 | 5.4 | 3.7 | 4.4 | 9.9 | 9.2 |
| Dallas, Tex | 7.9 | 12.5 | 10.9 | 15.0 | 15.8 | 20.6 | 17.7 | 22.5 | 19.4 | 23.8 |
| Des Moines, Iowa | 13.3 | 16.3 | 4.8 | 4.9 | 18.3 | 20.4 | 23.8 | 26.8 | 29.4 | 32.1 |
| Erie, Pa | 1.0 | 3.3 | 1.4 | 1.9 | 3.1 | 6.2 | 2.6 | 5.2 | 14.5 | 15.9 |
| Indianapolis, Ind | 13.2 | 18.8 | 6.5 | 7.2 | 19.1 | 26.5 | 19.7 | 25.1 | 32.2 | 36.1 |
| Jacksonville, Fla | 7.1 | 11.5 | 31.2 | 33.0 | 66.7 | 69.2 | 19.7 | 24.1 | 31.2 | 34.3 |
| Kenosha, Wis | 1.7 | 7.8 | 1.4 | 3.0 | 8.2 | 14.7 | 2.5 | 9.3 | 11.1 | 16.9 |
| Knoxville, Tenn | 5.3 | 19.1 | 25.4 | 31.0 | 77.4 | 81.0 | 16.8 | 29.6 | 40.9 | 48.9 |
| Little Rock, Ark | 15.9 | 2.43 | 21.5 | 27.5 | 25.9 | 34.6 | 23.7 | 32.2 | 27.4 | 35.2 |
| Minneapolis, Minn | 1.5 | 5.6 | 1.4 | 2.5 | 3.6 | 9.1 | 7.1 | 11.3 | 12.3 | 16.1 |
| Oklahoma, Okla | 12.2 | 17.1 | 8.5 | 12.3 | 9.2 | 13.0 | 25.0 | 29.9 | 22.0 | 27.2 |
| Peoria, Ill | 5.9 | 11.1 | 5.2 | 6.0 | 13.0 | 20.9 | 22.2 | 27.7 | 31.5 | 35.9 |
| Portland, Oreg | 1.1 | 2.0 | 1.3 | 2.3 | 24.1 | 29.8 | 6.4 | 9.9 | 8.4 | 11.6 |
| Providence, R. I | .1 | 2.8 | 2.3 | 3.1 | 11.1 | 23.0 | 3.1 | 9.2 | 20.3 | 22.9 |
| Racine, Wis | 1.1 | 6.7 | 1.2 | 3.5 | 7.5 | 13.9 | 4.5 | 10.8 | 19.0 | 24.0 |
| Richmond, Va | 6.4 | 13.4 | 17.9 | 20.2 | 37.1 | 44.1 | 31.5 | 35.1 | 30.5 | 34.6 |
| Sacramento, Calif | 1.2 | 4.9 | 1.4 | 3.1 | 3.5 | 15.1 | 7.0 | 15.7 | 8.0 | 14.5 |
| Salt Lake City, Utah | 2.0 | 5.8 | 1.3 | 2.1 | 40.7 | 50.0 | 8.7 | 17.1 | 11.0 | 18.2 |
| San Diego, Calif | .5 | .6 | 1.8 | 2.2 | 3.6 | 6.0 | 4.7 | 6.1 | 7.6 | 8.6 |
| Seattle, Wash | 1.6 | 3.8 | 1.0 | 1.4 | 33.4 | 40.3 | 6.6 | 10.3 | 8.8 | 12.5 |
| St. Paul, Minn | 2.1 | 7.1 | 2.1 | 3.3 | 5.5 | 14.6 | 7.2 | 13.6 | 12.5 | 19.0 |
| Syracuse, N. Y | .2 | 2.5 | 1.3 | 2.0 | 3.7 | 8.6 | 4.9 | 7.6 | 10.1 | 13.4 |
| Trenton, N. J | .2 | 3.3 | 5.2 | 5.9 | 10.1 | 14.7 | 10.0 | 14.9 | 14.1 | 16.7 |
| Waterbury, Conn | .8 | 2.7 | 1.7 | 2.6 | 11.5 | 17.4 | 3.2 | 6.2 | 9.9 | 13.0 |
| Wheeling, W. Va | 2.1 | 26.1 | 4.5 | 14.9 | 5.1 | 27.1 | 19.2 | 40.9 | 27.0 | 48.5 |
| Wichita, Kans | 11.4 | 15.5 | 4.4 | 6.2 | 15.5 | 19.8 | 18.3 | 22.5 | 20.8 | 24.6 |
| Wilmington, Del | .8 | 8.1 | 8.0 | 10.1 | 12.4 | 20.6 | 18.5 | 24.0 | 15.8 | 22.3 |
| Worcester, Mass | .4 | 2.4 | .6 | 1.3 | 19.9 | 34.4 | 2.3 | 7.3 | 7.3 | 15.3 |

[1] Compiled from Department of Commerce, Bureau of Foreign and Domestic Commerce, *Real Property Inventory, 1934*, Summary and Sixty-Four Cities Combined (Washington, D. C., 1935).
[2] Metropolitan central city. [3] Metropolitan district.

TABLE 46.—*Percentage distribution according to income groups of families without gas, electricity, and other fuels for cooking* [1]

| | Total family | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| **AUSTIN, TEX.** | | | | | | | | | | |
| Total families reporting | 1,697 | 2.7 | 22.3 | 23.2 | 17.7 | 12.1 | 11.2 | 7.8 | 2.1 | 0.9 |
| Having gas | 1,195 | 2.3 | 9.4 | 19.8 | 21.9 | 15.8 | 15.5 | 11.1 | 2.9 | 1.3 |
| Having electricity | 1 | 0 | 0 | 0 | 0 | 0 | 100.0 | 0 | 0 | 0 |
| Having other cooking facilities | 501 | 3.4 | 55.3 | 31.3 | 7.8 | 3.2 | .8 | 0 | .2 | 0 |
| **FARGO, N. DAK.** | | | | | | | | | | |
| Total families reporting | 1,403 | 3.6 | 12.1 | 18.7 | 21.5 | 17.1 | 16.8 | 8.1 | 1.6 | 0.5 |
| Having gas | 1,210 | 3.2 | 8.8 | 16.4 | 22.2 | 18.9 | 18.8 | 9.3 | 1.8 | .6 |
| Having electricity | 2 | 0 | 0 | 0 | 50.0 | 0 | 50.0 | 0 | 0 | 0 |
| Having other cooking facilities | 191 | 6.3 | 32.5 | 34.0 | 17.3 | 5.7 | 3.7 | .5 | 0 | 0 |

[1] Taken from *Consumer Use of Selected Goods and Services by Income-Classes*, Market Research Series No. 5; 1:2:3:4:5:6:9, Department of Commerce, Bureau of Foreign and Domestic Commerce (Washington, D. C., 1935–36).

TABLE 46.—*Percentage distribution according to income groups of families without gas, electricity, and other fuels for cooking* [1]—Continued

| | Total family | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| **PORTLAND, MAINE** | | | | | | | | | | |
| Total families reporting | 3,097 | 2.2 | 12.1 | 20.4 | 23.7 | 17.2 | 14.8 | 6.9 | 1.5 | 1.2 |
| Having gas | 2,305 | 1.8 | 8.7 | 18.4 | 23.2 | 18.8 | 17.5 | 8.2 | 2.0 | 1.4 |
| Having electricity | 47 | 0 | 6.4 | 8.5 | 14.9 | 17.0 | 31.9 | 19.2 | 0 | 2.1 |
| Having other cooking facilities | 745 | 3.6 | 22.9 | 27.1 | 25.8 | 12.1 | 5.4 | 2.4 | .4 | .3 |
| **COLUMBIA, S. C.** | | | | | | | | | | |
| Total families reporting | 1,697 | 2.6 | 38.1 | 20.5 | 10.5 | 9.7 | 9.5 | 7.0 | 1.3 | 0.8 |
| Having gas | 682 | 1.7 | 5.7 | 14.1 | 15.4 | 20.8 | 21.3 | 16.6 | 2.5 | 1.9 |
| Having electricity | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Having other cooking facilities | 1,015 | 3.1 | 59.8 | 24.9 | 7.2 | 2.2 | 1.7 | .6 | .5 | 0 |

TABLE 46.—*Percentage distribution according to income groups of families without gas, electricity, and other fuels for cooking*[1]—Continued

| | Total family | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| SALT LAKE CITY, UTAH | | | | | | | | | | |
| Total families reporting | 6,528 | 3.6 | 22.2 | 23.0 | 20.0 | 13.9 | 10.7 | 5.0 | 0.9 | 0.7 |
| Having gas | 2,133 | 2.1 | 13.7 | 22.9 | 23.4 | 17.5 | 13.1 | 5.3 | 1.2 | .8 |
| Having electricity | 1,443 | 2.2 | 6.5 | 11.9 | 18.2 | 21.0 | 23.1 | 13.0 | 2.2 | 1.9 |
| Having other cooking facilities | 2,952 | 5.5 | 36.0 | 28.5 | 18.4 | 7.7 | 2.8 | .9 | .1 | .1 |
| TRENTON, N. J. | | | | | | | | | | |
| Total families reporting | 3,707 | 8.0 | 19.7 | 27.5 | 20.6 | 10.7 | 9.0 | 3.3 | 0.9 | 0.3 |
| Having gas | 3,409 | 7.1 | 17.7 | 27.4 | 21.9 | 11.4 | 9.8 | 3.5 | .9 | .3 |
| Having electricity | 1 | 0 | 0 | 0 | 100.0 | 0 | 0 | 0 | 0 | 0 |
| Having other cooking facilities | 297 | 18.5 | 42.4 | 29.7 | 5.4 | 3.0 | .3 | .7 | 0 | 0 |
| BIRMINGHAM, ALA | | | | | | | | | | |
| Total families reporting | 9,119 | 5.1 | 36.7 | 20.4 | 14.8 | 10.6 | 7.9 | 3.3 | 0.9 | 0.3 |
| Having gas | 5,175 | 3.2 | 15.5 | 21.3 | 22.4 | 16.7 | 13.2 | 5.7 | 1.5 | .5 |
| Having electricity | 93 | 3.2 | 3.2 | 9.7 | 28.0 | 25.8 | 19.4 | 7.5 | 3.2 | 0 |
| Having other cooking facilities | 3,851 | 7.6 | 66.0 | 19.4 | 4.3 | 2.0 | .6 | .1 | 0 | 0 |

See footnote on page 190.

began. (Oil-burning equipment found such widespread adoption that it resulted in reducing the demand for anthracite coal.) But, according to the Lynds, "most of the working class still lives in the base-burner and unheated bedroom era."[23] According to the Real Property Inventory, 42.4 percent of the dwelling units in 64 representative cities reported the heating stove as their sole source of heat. Only 0.3 percent were found to be entirely without any provision for heat. The farm population is very much more poorly situated. In only 3 States out of 46 (no data were available for New York or Pennsylvania) did as many as 40 percent of the farmhouses surveyed have some form of central heat.

The cities in the South Atlantic, East South Central, and Mountain States have by far the largest proportion of dwellings equipped with heating stoves, for example:

| | Percent |
|---|---|
| Asheville, N. C | 50.8 |
| Austin, Tex | 95.1 |
| Baton Rouge, La | 49.8 |
| Boise Idaho | 55.9 |
| Butte, Mont | 70.5 |
| Caspar, Wyo | 63.8 |
| Charleston, S. C | 75.5 |
| Greensboro, N. C | 55.5 |
| Paducah, Ky | 74.2 |
| Phoenix, Ariz | 82.9 |
| Dallas, Tex | 96.9 |
| Little Rock, Ark | 95.8 |
| Oklahoma City, Okla | 88.3 |
| Richmond, Va | 61.3 |

as contrasted with

| | Percent |
|---|---|
| Lansing, Mich | 13.0 |
| Lincoln, Nebr | 18.6 |
| Williamsport, Pa | 28.0 |
| Des Moines, Iowa | 22.3 |
| Minneapolis, Minn | 20.9 |
| Peoria, Ill | 22.7 |
| Racine, Wis | 18.7 |

In New York City itself approximately 15 percent of all dwelling units (387,000) are without central heat. (Cf. table 47 for the status of some of the important industrial cities in New Jersey in this respect.)

TABLE 47.—*Conveniences in dwellings in 40 selected municipalities of New Jersey*[1]

| Geographic division | Percent still using heating stoves | Percent having cold water only | Percent having no indoor toilets | Percent having no tubs or showers |
|---|---|---|---|---|
| Newark | 44.8 | 19.0 | 5.0 | 19.7 |
| Jersey City | 48.3 | 14.4 | .8 | 19.4 |
| Paterson | 47.0 | 35.4 | 4.2 | 20.4 |
| Trenton | 23.4 | 15.0 | 14.9 | 16.8 |
| Camden | 21.0 | 18.0 | 19.3 | 18.7 |
| Elizabeth | 36.8 | 15.1 | 1.4 | 17.5 |
| Atlantic City | 17.7 | 7.5 | 4.0 | 6.2 |
| Passaic | 47.1 | 24.7 | .4 | 25.9 |
| Perth Amboy | 51.5 | 39.0 | 2.8 | 25.6 |
| 40 New Jersey municipalities | 36.4 | ..... | 4.1 | 16.7 |

[1] Data compiled from *Real Property Inventory of the New Jersey State Housing Authority.* Adapted from E. E. Wood, *Slums and Blighted Areas in the United States*, Housing Division Bulletin, No. 1, Federal Emergency Administration of Public Works (Washington, 1935).

It may of course be possible to explain in part the differences in northern and southern cities by reference to climatic differences which make complicated and expensive heating apparatus undesirable where the winters are usually not very rigorous. But a breakdown of the homes within a given community indicates that the same type of difference exists between upper and lower income groups as exists in general between North and South. It seems then that the position of the Southern States in respect to heating facilities is due not only or even primarily to the mildness of the southern winter, but rather to the economically depressed condition of a very large section of the population (even as compared with the North where the same phenomenon is also quite prominent). The fact that those whose homes are heated by furnaces or central heating plants are concentrated in the relatively higher

[23] H. H. and R. S. Lynd, *Middletown: A Study of Contemporary American Culture* (New York, 1929), p. 96.

TABLE 48.—*Percentage distribution, according to income level, of families reporting specified heating facilities, in selected cities: 1933* [1]

| | Total family | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000 and over |
|---|---|---|---|---|---|---|---|---|---|---|
| **AUSTIN, TEX.** | | | | | | | | | | |
| Total families reporting | 1,697 | 2.7 | 22.3 | 23.2 | 17.7 | 12.1 | 11.2 | 7.8 | 2.1 | 0.9 |
| Stove | 1,612 | 2.7 | 23.0 | 23.8 | 18.1 | 12.2 | 11.0 | 6.9 | 1.7 | .8 |
| Central heating plant | 46 | 2.2 | 0 | 2.2 | 4.3 | 4.3 | 19.6 | 37.0 | 17.4 | 13.0 |
| Other heating facilities | 39 | 0 | 23.1 | 25.6 | 17.9 | 15.4 | 7.7 | 10.3 | 0 | 0 |
| **FARGO, N. DAK.** | | | | | | | | | | |
| Total families reporting | 1,403 | 3.6 | 12.1 | 18.7 | 21.5 | 17.1 | 16.8 | 8.1 | 1.6 | 0.5 |
| Heating stove | 128 | 4.7 | 32.8 | 37.5 | 17.9 | 5.5 | .8 | .8 | 0 | 0 |
| Warm-air furnace | 845 | 3.5 | 10.3 | 17.1 | 21.8 | 19.3 | 18.2 | 8.3 | 1.1 | .4 |
| Steam or vapor | 46 | 4.4 | 8.7 | 23.9 | 34.8 | 17.4 | 4.3 | 4.3 | 0 | 2.2 |
| Hot water | 383 | 3.4 | 9.4 | 15.4 | 20.6 | 16.2 | 20.6 | 10.2 | 3.4 | .8 |
| Other heating facilities | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 100.0 | 0 | 0 |
| **PORTLAND, MAINE** | | | | | | | | | | |
| Total families reporting | 3,097 | 2.2 | 12.1 | 20.4 | 23.7 | 17.2 | 14.8 | 6.9 | 1.5 | 1.2 |
| Heating stove | 730 | 5.2 | 25.6 | 30.6 | 24.4 | 10.7 | 2.6 | .8 | .1 | 0 |
| Warm-air furnace | 322 | .9 | 9.9 | 19.3 | 29.5 | 20.8 | 13.7 | 4.7 | .6 | .6 |
| Steam or vapor | 1,594 | 1.3 | 7.9 | 17.2 | 21.4 | 19.8 | 19.9 | 8.7 | 2.1 | 1.7 |
| Hot water | 425 | 1.6 | 6.8 | 15.8 | 26.6 | 16.0 | 17.9 | 12.0 | 2.1 | 1.2 |
| Other heating facilities | 26 | 0 | 3.9 | 19.2 | 23.1 | 11.5 | 11.5 | 15.4 | 7.7 | 7.7 |
| **COLUMBIA, S. C.** | | | | | | | | | | |
| Total families reporting | 1,697 | 2.6 | 38.1 | 20.5 | 10.5 | 9.7 | 9.5 | 7.0 | 1.3 | 0.8 |
| Heating stove | 583 | 1.7 | 26.6 | 26.9 | 16.6 | 14.1 | 8.6 | 4.5 | .7 | .3 |
| Warm-air furnace | 194 | 1.0 | 3.1 | 6.2 | 8.8 | 19.1 | 25.8 | 28.3 | 5.1 | 2.6 |
| Steam or vapor | 40 | 0 | 0 | 10.0 | 15.0 | 10.0 | 15.0 | 35.0 | 7.5 | 7.5 |
| Hot water | 93 | 2.2 | 29.0 | 11.8 | 4.3 | 9.7 | 21.5 | 15.1 | 3.2 | 3.2 |
| Other heating facilities | 787 | 3.8 | 58.2 | 21.0 | 6.9 | 4.1 | 4.5 | 1.3 | .2 | 0 |
| **TRENTON, N. J.** | | | | | | | | | | |
| Total families reporting | 3,707 | 8.0 | 19.7 | 27.5 | 20.6 | 10.7 | 9.0 | 3.3 | 0.9 | 0.3 |
| Heating stove | 1,070 | 13.7 | 31.0 | 32.2 | 18.9 | 2.6 | 1.2 | .4 | 0 | 0 |
| Warm-air furnace | 1,318 | 6.8 | 19.5 | 31.3 | 20.4 | 12.1 | 8.1 | 1.4 | .2 | .2 |
| Steam or vapor | 626 | 2.7 | 9.3 | 18.2 | 26.5 | 15.0 | 18.9 | 7.8 | 1.3 | .3 |
| Hot water | 681 | 6.0 | 11.4 | 21.6 | 18.8 | 16.9 | 14.1 | 7.2 | 3.1 | .9 |
| Other heating facilities | 12 | 16.8 | 33.3 | 33.3 | 8.3 | 8.3 | 0 | 0 | 0 | 0 |
| **BIRMINGHAM, ALA.** | | | | | | | | | | |
| Total families reporting | 9,119 | 5.1 | 36.7 | 20.4 | 14.8 | 10.6 | 7.9 | 3.3 | 0.9 | 0.3 |
| Heating stove | 2,402 | 5.7 | 32.3 | 24.8 | 19.1 | 10.9 | 6.1 | .9 | .2 | 0 |
| Warm-air furnace | 1,402 | 3.1 | 8.1 | 16.4 | 20.4 | 19.0 | 18.8 | 10.6 | 2.6 | 1.0 |
| Steam or vapor | 744 | 2.0 | 5.9 | 11.3 | 20.8 | 22.6 | 20.0 | 11.2 | 4.7 | 1.5 |
| Hot water | 251 | 4.0 | 6.0 | 17.1 | 22.3 | 21.5 | 20.7 | 8.0 | .4 | 0 |
| Other heating facilities | 4,320 | 5.9 | 55.4 | 21.0 | 9.2 | 5.0 | 2.5 | .8 | .1 | .1 |

[1] Taken from *Consumer Use of Selected Goods and Services by Income Classes*, Market Research Series No. 5; 1, 2, 3, 4, 5, 6, 9, Department of Commerce, Bureau of Foreign and Domestic Commerce (Washington, D. C., 1935–36).

income groups indicates that such equipment is useful but that it is not easily accessible to the lower income groups (cf. table 48).

### Other Conveniences

The conveniences with which we have dealt thus far have been of such a character that they might be regarded as an integral part of the structure of the dwelling unit itself. Those which are to be considered next are of a secondary or derivative kind, since their presence or absence does not in most cases affect the structure of the unit and they in their turn are usually dependent on the prior existence of one of the primary conveniences, as, for instance, electricity. Most of them are labor-saving devices used in housekeeping tasks such as electric irons, vacuum cleaners, toasters, grills, and washing machines. Their significance lies primarily in the fact that even though they prevent certain household functions from being transferred from home to factory, laundry or restaurant, they do nevertheless operate in somewhat the same direction in that they liberate the housekeeper from the performance of certain physically onerous and time-consuming duties and make it possible for her to use the time and energy saved for other purposes—either familial or nonfamilial. To the extent that the housekeeper is made free for nonfamilial activities, it renders possible a reduction in the amount of use made of the home and accordingly decreases the demand for differentiated spatial arrangements. In other words, the less use people make of their homes, the easier it is for them to adjust themselves to smaller quarters.

These accessories are not equally distributed over the population nor are they equally common. The differ-

TABLE 49.—*Number of homes in the United States having certain electrical appliances on Jan. 1, 1932* [1]

[Total percent of wired homes 20,441,000]

| Appliance | Number of homes | Percent wired houses | Percent of all houses |
|---|---|---|---|
| Irons | 19,772,325 | 96.7 | 64.8 |
| Vacuum cleaners | 9,281,750 | 45.4 | 30.4 |
| Washing machines | 8,356,250 | 40.8 | 27.4 |
| Toasters | 8,245,950 | 40.3 | 27.0 |
| Percolators | 5,894,000 | 28.8 | 19.3 |
| Refrigerators | 3,498,750 | 17.1 | 11.5 |
| Sewing machines | 3,350,000 | 16.4 | 11.0 |
| Clocks | 3,350,000 | 16.4 | 11.0 |
| Heaters | 3,339,080 | 16.3 | 11.0 |
| Waffle irons | 3,735,000 | 13.4 | 9.0 |
| Hot plates | 2,238,000 | 10.9 | 7.3 |
| Heating pads | 2,236,000 | 10.9 | 7.3 |
| Cookers | 2,242,000 | 6.1 | 4.1 |
| Ranges | 1,095,000 | 5.3 | 3.6 |
| Ironers | 735,990 | 3.5 | 2.4 |
| Floor machines | 306,400 | 1.5 | 1.0 |
| Egg cookers | 293,000 | 1.4 | .9 |
| Dishwashers | 114,000 | .6 | .4 |

[1] *Electrical Merchandising* (January 1932), p. 29.

Source: A. F. Bemis, *The Evolving House*, II (Cambridge, 1924), p. 67

ences in degree of diffusion is illustrated by table 49. The widening diffusion of the use of such devices as those listed in table 49 represents a democratization of the products of modern invention and technique, and even though those available to the lower income groups are less satisfactory from the point of view of quality, they indicate a gradual improvement at least in certain respects of the standard of living of the American people.

The electric iron has now supplanted the old-fashioned flat or gas iron in practically every household in which electrical power is available. The ease with which it can be made ready for use constitutes a reduction of the amount of physical labor involved in domestic work. The electric iron is probably one of the factors which has served as a counterbalance to the outward flow of the traditional family functions. Together with stationary laundry tubs (28.3 percent of almost 2,000,000 dwellings in more than 1,000 urban communities were equipped with these in 1925–26),[24] electrical washing machines,[25] electrical wringers, driers, etc. The electric iron has kept laundering in the home to a much greater extent than would have been the case had these technological improvements not been made.

Refrigeration, both mechanical and nonmechanical, is still something of a luxury. Although it has become more democratized in the past two decades, in 1929, 40 percent of American homes were still without refrigeration of any kind.[26] Among the families without refrigeration facilities, perishable food either was stored unsafely or else it was not stored at all. Nevertheless, even if it be granted that there is still a large section of the population which is without some sort of refrigeration, it also must be recognized that the great increase in the commercial production of ice points to a certain increase in its domestic use.

A more recent development—which in one way represents a countertrend and in another a continuation of the one described in the preceding paragraph—is the increasing use of mechanical refrigeration in the home. In 1917 only 1,200 iceless refrigerators were sold, while in 1927, 635,000 were sold. In 1932 there were 3,498,750 electrical refrigerators in use (table 63) in 11.5 percent of all homes in the United States. The Real Property Inventory shows that 17 percent of all dwelling units in 64 cities were equipped with mechanical refrigerators.

The regional distribution shows some rather wide divergences both between rented and owner-occupied dwellings and between the extent of provision with these household conveniences and others. Of the owner-occupied dwellings, those in the South Atlantic and West South Central States are the best equipped; but the Pacific States, which were among the highest in all other respects, are almost on a level with the East South Central States, which are near the bottom in most other respects (cf. table 50). Of the rented dwellings, on the other hand, those in the Pacific States are best equipped, followed by those in the West North Central and Mountain regions. The Middle Atlantic and New England regions especially show up poorly in the rented category.

TABLE 50.—*Number and percent owner-occupied and of rented dwelling units equipped with mechanical refrigeration in 61 cities, by geographic divisions: 1934* [1]

| Geographic division | Total owner occupied dwelling units | Owner occupied | | Total rental units | Rental | |
|---|---|---|---|---|---|---|
| | | Number with | Percent of total | | Number with | Percent of total |
| Total | 1,035,927 | 217,102 | 20.96 | 1,597,208 | 230,033 | 14.40 |
| New England | 109,995 | 21,369 | 19.43 | 194,131 | 15,649 | 8.06 |
| Middle Atlantic | 33,151 | 15,798 | 19.00 | 102,563 | 11,482 | 11.20 |
| East North Central | 224,833 | 45,049 | 20.04 | 338,235 | 51,493 | 15.22 |
| West North Central | 177,120 | 36,928 | 20.85 | 223,490 | 42,548 | 18.95 |
| South Atlantic | 112,447 | 32,031 | 28.49 | 230,970 | 28,904 | 12.51 |
| East South Central | 45,962 | 8,123 | 17.67 | 108,485 | 8,335 | 7.68 |
| West South Central | 76,149 | 18,872 | 24.78 | 139,678 | 18,245 | 13.06 |
| Mountain | 49,274 | 10,813 | 21.94 | 65,573 | 11,057 | 16.86 |
| Pacific | 156,996 | 28,119 | 17.91 | 194,083 | 42,320 | 21.81 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

It is difficult to supply any clear-cut explanation for these variations, assuming that the sample is an adequate one. One possible explanation may be found in the cost of manufacturing ice in the various parts of the country, but since no information is available concerning it, we are unable to decide about its possible significance. Differences in electricity rates might be another explanation. Degree of urbanization might be a significant factor, although table 51 shows that cities between 10,000 and 25,000 and those between 250,000 and 500,000 have the same rate. If we exclude those in the smaller category in which there are only six cities and the one city in the 500,000 and over category, we notice an irregular positive relationship. The distribution by degree of industrialization seems to be too irregular to warrant any conclusion concerning the relationship between these series (table 52).

One relationship which seems to be significant is that with home ownership, although it has no connection

[24] General Federation of Women's Clubs under the direction of the Industrial Survey and Research Service, *Urban Home Equipment Survey, 1925–26* (Washington, D. C.), cited by Leo Wolman, Consumption and Standards of Living, *Recent Social Trends*, p. 66.

[25] The extension of the use of electrical washing machines may be seen in the following figures of washing machine sales:

| | | | |
|---|---|---|---|
| 1916 | $7,000,000 | 1920 | $85,000,000 |
| 1919 | 50,000,000 | 1923 | 82,000,000 |

(Cf. R. S. and H. M. Lynd, *Middletown* (New York: 1929), p. 172, footnote 26.) The total value of electrical washing and ironing machines produced increased 65 percent from 1919 to 1929, while that of electrical flatirons increased 50 percent during that period. (Cf. W. F. Ogburn and C. Tibbitts, The Family and Its Functions, *Recent Social Trends* (New York: 1933), p. 668; also J. Dollard, *The Changing Functions of the American Family*, University of Chicago, Ph. D. dissertation, ch. 11).

[26] Paul Nystrom, *Economic Principles of Consumption* (New York, 1929), p. 408.

with the peculiar regional distribution. The definitely positive relationship between income and mechanical refrigeration is clearly illustrated in table 53, which presents data for a limited number of cities.

TABLE 51.—*Percentage of dwelling units having mechanical refrigeration, by city size groups: 1934* [1]

| Size of city | Percentage of dwelling units having mechanical refrigeration | Size of city | Percentage of dwelling units having mechanical refrigeration |
|---|---|---|---|
| 10,000 to 25,000 | 18.00 | 100,000 to 250,000 | 16.50 |
| 25,000 to 50,000 | 13.25 | 250,000 to 500,000 | 18.00 |
| 50,000 to 100,000 | 16.93 | 500,000 and over | 10.50 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

TABLE 52.—*Percentage of dwelling units having mechanical refrigeration, by degree of industrialization: 1934* [1]

| Percent employed in manufacturing and mechanical industries | Percentage of dwelling units having mechanical refrigeration | Percent employed in manufacturing and mechanical industries | Percentage of dwelling units having mechanical refrigeration |
|---|---|---|---|
| 5.0 to 14.99 | 7.00 | 35.0 to 44.0 | 17.00 |
| 15.0 to 24.99 | 14.00 | 44.0 to 54.0 | 13.50 |
| 25.0 to 34.0 | 18.80 | 55.0 to 64.0 | 13.00 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

TABLE 53.—*Percentage distribution, according to income level, of families with and without mechanical refrigeration, in selected cities, 1933* [1]

AUSTIN, TEX.

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 1,697 | 2.7 | 22.3 | 23.2 | 17.7 | 12.1 | 11.2 | 7.8 | 2.1 | 0.9 |
| With | 273 | 2.6 | 2.2 | 5.1 | 13.6 | 16.8 | 23.1 | 25.3 | 8.4 | 2.9 |
| Without | 1,424 | 2.7 | 26.2 | 26.7 | 18.4 | 11.2 | 8.9 | 4.5 | .9 | .5 |

FARGO, N. DAK.

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 1,403 | 3.6 | 12.1 | 18.7 | 21.5 | 17.1 | 16.8 | 8.1 | 1.6 | 0.5 |
| With | 395 | 2.0 | 2.0 | 7.6 | 15.2 | 19.5 | 28.1 | 20.0 | 4.1 | 1.5 |
| Without | 1,008 | 4.2 | 16.0 | 23.1 | 24.0 | 16.2 | 12.4 | 3.4 | .6 | .1 |

PORTLAND, MAINE

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 3,097 | 2.2 | 12.1 | 20.4 | 23.7 | 17.2 | 14.8 | 6.9 | 1.5 | 1.2 |
| With | 521 | 1.0 | 4.6 | 9.2 | 16.5 | 16.9 | 22.4 | 18.4 | 5.6 | 5.4 |
| Without | 2,576 | 2.5 | 13.6 | 22.7 | 25.1 | 17.2 | 13.3 | 4.6 | .7 | .3 |

See footnote at end of table.

TABLE 53.—*Percentage distribution, according to income level, of families with and without mechanical refrigeration, in selected cities, 1933*—Continued

COLUMBIA, S. C.

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 1,697 | 2.6 | 38.1 | 20.5 | 10.5 | 9.7 | 9.5 | 7.0 | 1.3 | 0.8 |
| With | 310 | 1.0 | 2.9 | 5.2 | 9.0 | 20.6 | 28.7 | 23.9 | 4.5 | 4.2 |
| Without | 1,387 | 3.0 | 45.9 | 24.0 | 10.8 | 7.2 | 5.3 | 3.2 | .6 | 0 |

SALT LAKE CITY, UTAH

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 6,528 | 3.6 | 22.2 | 23.0 | 20.0 | 13.9 | 10.7 | 5.0 | 0.9 | 0.7 |
| With | 1,732 | 1.5 | 4.6 | 10.3 | 19.4 | 21.2 | 23.9 | 14.2 | 2.7 | 2.2 |
| Without | 4,796 | 4.4 | 28.6 | 27.6 | 20.2 | 11.3 | 5.8 | 1.7 | .3 | .1 |

TRENTON, N. J.

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 3,707 | 8.0 | 19.7 | 27.5 | 20.6 | 10.7 | 9.0 | 3.3 | 0.9 | 0.3 |
| With | 344 | 2.6 | 3.2 | 13.4 | 18.3 | 17.2 | 22.1 | 14.5 | 6.7 | 2.0 |
| Without | 3,363 | 8.5 | 21.3 | 29.0 | 20.9 | 10.1 | 7.7 | 2.1 | .3 | .1 |

BIRMINGHAM, ALA.

| | Total families | No income | $1 to $499 | $500 to $999 | $1,000 to $1,499 | $1,500 to $1,999 | $2,000 to $2,999 | $3,000 to $4,999 | $5,000 to $6,999 | $7,000+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Total families reporting | 9,119 | 5.1 | 36.7 | 20.4 | 14.8 | 10.6 | 7.9 | 3.3 | 0.9 | 0.3 |
| With | 1,620 | 1.5 | 4.2 | 9.9 | 20.3 | 22.4 | 22.8 | 13.7 | 3.8 | 1.4 |
| Without | 7,499 | 5.8 | 43.7 | 22.6 | 13.6 | 8.1 | 4.7 | 1.1 | .3 | .1 |

[1] From Department of Commerce, Bureau of Foreign and Domestic Commerce, *Consumer Use of Selected Goods and Services by Income Classes* (Washington, D. C., 1935–36), Market Research Series No. 5; 1, 2, 3, 4, 5, 6, 9.

## Physical Condition of Structure

### Age

In estimating either the present condition or the future need for housing, the age of the existing structures is an important consideration, not only because it is an index to adequacy of the structure according to modern standards, but since each type of structure has a more or less fixed life span, it enables us to predict approximately how many of the structures standing at present will have outlived their usefulness by a given time in the future. It is necessary to recognize that age is not an unambiguous index to condition; first, because the durability of a structure varies with the material of which it is constructed; and second, because certain older buildings may be in better condition than newer ones, due to better care and necessary repairs. However, as Dr. E. E. Wood points out,[27] this qualifi-

[27] *Slums and Blighted Areas in the United States*, Bulletin No. 1, Federal Emergency Administration of Public Works, Housing Division (Washington, D. C., 1935), p. 79.

cation probably applies largely to the homes of the upper income groups, while the reverse holds for the dwellings of the lower income groups; i. e., the older the buildings the less likely they are to get the necessary repairs and modernization. It is worth while then to analyze the age of our present residential structures with reference to the measuring rod set forth in table 54, which was prepared for the Bureau of Internal Revenue of the United States Treasury by the National Association of Real Estate Boards for purposes of determining proper depreciation and obsolescence charge-off on income-tax returns.

TABLE 54.—*Average length of life by type of structure and materials of construction* [1]

| Type of building | Steel frame fireproof | Reinforced concrete | Masonry slow burning without steel frame | Masonry with frame interior | Frame |
|---|---|---|---|---|---|
| | *Years* | *Years* | *Years* | *Years* | *Years* |
| 1-family dwelling | 50 | 50 | 50 | 50 | 33⅓ |
| 2-, 3-, and 4-family dwellings | 42 | 42 | 38 | 33⅓ | 30 |
| Row houses | 45 | 45 | 40 | 35 | 30 |
| Apartments and flats without elevators | 40 | 40 | 35 | 30 | 25 |
| Hotels and elevator apartments | 35 | 35 | 28 | 25 | 22 |

[1] Taken from Dr. E. E. Wood, *Slums and Blighted Areas in the United States*, Housing Division Bulletin No. 1, Federal Emergency Administration of Public Works (Washington, 1935), p. 79.

It is first of all necessary to point out that 79.6 percent of all the houses surveyed were single-family houses, the structural type which for each type of construction material has the longest life. At the same time it should be remembered that 82 percent of all dwelling units are of wood, for which the longest life expectation is 33⅓ years.

For all of the cities surveyed, 7.8 percent of the dwelling units are over 50 years old and 22.1 percent are between 30 and 50, making a total of 29.9 percent over 30 years of age (cf. table 55). If we assume that a disproportionately large number of these are single-family and frame, since they were built at a time before multifamily structures had attained their present prominence, then it would seem safe to say that about 20 percent of our dwellings are single-family, wood, and over 30 years old, which means that they are very likely to be in a state of advanced obsolescence.

The average age of the various types of dwelling structures in a community probably depends more on the age of the city itself and on its rate of growth in the past four or five decades than on anything else (in addition, of course, to the economic status of the majority of the population). According to table 56 there seems to be little relationship between size as such and the percentage of residential units over 40 years of age, while the relationship between the percentage over 40 years and the degree of industrialization is a positive one, if we eliminate the two extreme categories in each of which there is only one case. Since the communities in each degree of industralization are not broken down for age and rate of growth, it is not possible to determine whether the interconnection referred to above is related to the economic status of the population of the various communities. It seems, however, to be quite plausible that the lower the income of a family the greater are the chances that it will be compelled to live in an older structure; and the larger the proportion of families in the lower income groups, the less the likelihood that new residential structures will be provided. Of course, the possible validity of this hypothesis would by no means be impaired by a situation in which many working class families occupied new homes which were built during a housing shortage [28]

TABLE 55.—*Age of residential structures in cities with a metropolitan district of 200,000 of population and over, covered in the Real Property Inventory: 1934* [1]

| Cities | Total number of structures | Less than 10 years | | 10 through 19 years | | 20 through 35 years | | 35 years and over | |
|---|---|---|---|---|---|---|---|---|---|
| | | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Worcester, Mass | 38,548 | 7,549 | 19.6 | 6,460 | 16.8 | 7,697 | 20.0 | 16,725 | 43.4 |
| Providence, R. I | 99,707 | 21,625 | 21.7 | 15,539 | 15.6 | 23,132 | 23.2 | 39,045 | 39.2 |
| Syracuse, N. Y | 43,509 | 10,950 | 25.2 | 7,653 | 17.6 | 10,284 | 23.6 | 14,471 | 33.3 |
| Indianapolis, Ind | 94,807 | 21,715 | 22.9 | 21,537 | 22.7 | 27,375 | 28.9 | 24,076 | 25.4 |
| Minneapolis, Minn | 95,859 | 24,333 | 25.4 | 26,759 | 27.9 | 25,541 | 26.6 | 19,025 | 19.8 |
| St. Paul, Minn | 65,174 | 12,761 | 19.6 | 17,019 | 26.1 | 17,016 | 26.1 | 18,294 | 28.1 |
| Richmond, Va | 41,201 | 8,791 | 21.3 | 8,401 | 20.4 | 11,366 | 27.6 | 12,620 | 30.6 |
| Atlanta, Ga | 69,267 | 19,020 | 27.5 | 18,248 | 26.3 | 23,292 | 33.6 | 8,604 | 12.4 |
| Birmingham, Ala | 82,704 | 25,970 | 31.4 | 22,944 | 27.7 | 27,707 | 33.5 | 6,060 | 7.3 |
| Oklahoma City, Okla | 40,093 | 18,962 | 47.3 | 11,916 | 29.7 | 3,620 | 21.5 | 444 | 1.1 |
| Dallas, Tex | 66,813 | 23,352 | 35.0 | 24,100 | 36.1 | 15,738 | 23.6 | 3,472 | 5.2 |
| Portland, Oreg | 93,528 | 27,751 | 29.7 | 27,626 | 29.5 | 30,254 | 32.3 | 7,793 | 8.3 |
| Seattle, Wash | 102,017 | 32,702 | 32.1 | 30,730 | 30.1 | 33,512 | 32.8 | 4,983 | 4.9 |
| New York | 594,437 | 188,437 | 31.7 | 125,586 | 21.1 | 90,294 | 15.2 | 190,120 | 32.0 |
| Cleveland | 136,557 | 20,691 | 15.1 | 34,225 | 25.1 | 41,244 | 30.2 | 40,397 | 29.6 |
| Boston | 86,391 | 9,630 | 11.1 | 7,905 | 9.2 | 18,268 | 21.1 | 50,237 | 58.2 |

[1] Source: U. S. Department of Commerce, *Real Property Inventory of 64 Cities, 1934;* City Planning Board, *Real Property Inventory for the City of Boston, 1934;* E. E. Wood, *Slums and Blighted Areas in the United States*, Housing Division Bulletin No. 1, Federal Emergency Administration of Public Works (Washington, 1935).

TABLE 56.—*Percentage of dwellings over 40 years old by city size groups: 1934* [1]

| Size of city | Percentage of dwellings over 40 years old | Size of city | Percentage of dwellings over 40 years old |
|---|---|---|---|
| 10,000 to 25,000 | 15.00 | 100,000 to 250,000 | 22.50 |
| 25,000 to 50,000 | 12.50 | 250,000 to 500,000 | 10.50 |
| 50,000 to 100,000 | 19.17 | 500,000 and over | 22.50 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory* 1934 (Washington, 1935).

[28] The housing shortage may be due either to an unusual increase in population or to a failure of building construction activity to keep pace with the natural increase in demand for homes

when, due to scarcity, families will agree to place extraordinary burdens on their budgets for shelter. It should be remembered that in such cases age is not likely to be a very good index of durability or quality.

### State of Repair

Although the age of the structure is one index of its physical condition,[29] it is less differentiated than the graduated indices applied in the Real Property Inventory under the rubrics "good," "needed minor repairs," or "needed major repairs," and "unfit for use."

The term "minor repairs" means that such repairs are needed as painting, papering, plastering, small repairs to porches, steps, or other parts of the woodwork, refinishing floors, redecorating, glazing jobs, patchwork jobs of all kinds, etc. The term "major repairs" means repairs to the roof, the foundation, or to the walls, renewal of the woodwork in case of joists, window frames, doorjambs or floors, plumbing or electrical replacements, the repair of bulging or sagging walls, or of chimneys in dilapidated condition, pointing brick walls, reshingling, in general any repairs that, if neglected much longer would seriously impair the value of the property. The term "unfit for use" applies to obsolete buildings, buildings in apparently dangerous condition, or those that cannot be repaired except at a cost out of all proportion to the value of the building.[30]

In these terms, 2.4 percent of all dwelling units in the cities surveyed were unfit for use, while 15.4 percent more needed structural repairs, constituting a total of 17.8 percent which can be lived in only with serious inconvenience [31] (cf. table 57). Only 37 percent of all the residences surveyed were in good condition and 44.9 percent required minor repairs. The Real Property Inventory gives no indication as to the degree of concentration of the various types of deficiencies subsumed under the need for minor repairs; for instance it does not tell what proportion had only two deficiencies and which seven, etc.

Southern cities, especially those with a large proportion of Negro inhabitants, have a higher percentage of their dwelling units in the two lowest categories than those in the Northern and Western States, e. g.:

| | *Percent* |
|---|---|
| Providence, R. I | 9. 6 |
| Racine, Wis | 17. 9 |
| Sacramento, Calif | 15. 8 |
| San Diego, Calif | 13. 1 |
| St. Paul, Minn | 15. 8 |
| Asheville, N. C | 26. 6 |
| Charleston, S. C | 26. 4 |
| Columbia, S. C | 20. 8 |
| Jackson, Miss | 23. 8 |
| Portland, Maine | 12. 0 |

The factors necessary to explain the differences among various cities seem to be connected with neither size nor degree of industrialization (cf. tables 58 and 59). Here again it seems probable that variations in the distribution of income in addition to differences in cultural standards are of primary importance. The dwellings occupied by the groups in the lower income brackets are those whose occupants are least capable of making effective demands for repairs. This, together with the fact that they already occupy the buildings which are potentially most in need of repair, tends to aggravate the situation.

Many of the buildings which either need very extensive repairs or are already beyond the stage of repair have been occupied in the last 5 or 6 years by persons dependent on relief. Inasmuch as most relief agencies pursued rather fluctuating policies with regard to rent payments and often paid rents only when the recipients of relief were either on the verge of eviction

TABLE 57.—*Condition of occupied dwelling units* [1]

| Condition | All dwelling units | | Single family units | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Occupied units: | | | | |
| Good condition | 946, 553 | 38. 97 | 579, 533 | 39. 93 |
| Need minor repairs | 1, 081, 385 | 44. 52 | 633, 055 | 43. 62 |
| Need major repairs | 357, 005 | 14. 70 | 213, 586 | 14 72 |
| Unfit for use | 41, 891 | 1. 72 | 23, 928 | 1. 65 |
| Not reported | 2, 073 | . 09 | 1, 137 | . 08 |
| Vacant units: | | | | |
| Good condition | 51, 558 | 25. 25 | 20, 127 | 23. 52 |
| Need minor repairs | 86, 565 | 42. 39 | 33, 771 | 39. 47 |
| Need major repairs | 48, 842 | 23. 91 | 21, 684 | 25. 34 |
| Unfit for use | 16, 856 | 8. 25 | 9, 723 | 11. 36 |
| Not reported | 407 | . 20 | 262 | . 31 |

[1] Data compiled from Nathaniel Engle, "Housing Conditions in America," *Journal of the American Statistical Association: 1935*, pp. 288-294.

[29] That age does not necessarily mean disrepair is roughly indicated by the following figures for the cities with the highest percentage over 40 years of age:

| Cities | Percent over 40 years old | Percent needing structural repairs or unfit for habitation |
|---|---|---|
| Providence, R. I | 41. 7 | 9. 6 |
| Wilmington, Del | 47. 4 | 13. 0 |
| Portland, Maine | 43. 8 | 11. 0 |
| Nashua, N. H | 49. 8 | 13. 4 |
| Burlington, Vt | 47. 5 | 9. 6 |
| Frederick, Md | 48. 1 | 9. 8 |
| Birmingham, Ala | 5. 2 | 28. 1 |
| Atlanta, Ga | 10. 7 | 29. 2 |
| Jacksonville, Fla | 3. 3 | 21. 4 |
| Caspar, Wyo | . 4 | 25. 8 |
| Charleston, S. C | 51. 3 | 26. 4 |
| Jackson, Miss | 58. 7 | 23. 7 |

[30] Department of Commerce; Bureau of Foreign and Domestic Commerce, *Real Property Inventory, 1934, Summary and Sixty-Four Cities Combined* (Washington, D. C.), p. 11.

[31] It should be noted that this figure is almost identical with the proportion of dwelling units without indoor water closets (17.1 percent); between the percentage of those having only cold running water (25 percent) and that of those without any running water at all (8 percent); somewhat less than that of those without either tub or showers (23.3 percent) etc., which make it highly probable that most of these negative characteristics are concentrated to a large extent in the same buildings. Of course, there are many residential units which with respect to their structure are neither unfit for habitation nor in need of major repairs but which are, nevertheless, lacking in such conveniences as hot and cold running water, gas or electricity for cooking, etc.

TABLE 58.—*Physical condition of dwelling units by city size groups: 1934* [1]

| Size of city | Percentage of dwelling units in good condition | Percentage of dwelling units unfit for habitation |
|---|---|---|
| 10,000–25,000 | 43.50 | 1.33 |
| 25,000–50,000 | 30.38 | 2.75 |
| 50,000–100,000 | 38.10 | 2.92 |
| 100,000–250,000 | 39.00 | 2.00 |
| 250,000–500,000 | 41.50 | 2.75 |
| 500,000 and over | 31.50 | 3.50 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

TABLE 59.—*Physical condition of dwelling units by degree of industrialization: 1934* [1]

| Percent employed in manufacturing and mechanical industries | Percentage of dwelling units in good condition | Percentage of dwelling units unfit for habitation |
|---|---|---|
| 5.0 to 14.99 | 21.00 | 8.25 |
| 15.0 to 24.99 | 37.50 | 2.13 |
| 25.0 to 34.0 | 36.00 | 2.2 |
| 35.0 to 44.0 | 32.00 | 2.00 |
| 45.0 to 54.0 | 39.00 | .88 |
| 55.0 to 64.0 | 39.00 | 1.25 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

or had already been evicted and were unable to obtain new quarters without an initial payment, gradually a considerable number of buildings in almost every city were simply dropped by their owners because the serious decrease in income from them had made tax and other payments impracticable. In many cases these buildings, even before the depression, had proved to be rather unprofitable investments and the owners had shown themselves to be unwilling to make a further investment for necessary repairs. Once they were given up by their owners, they deteriorated more and more.

Alongside of such situations, the factor of indifference to conditions of delapidation would seem to be of distinctly minor significance insofar as we understand by "indifference" the lack of interest in obtaining better housing conditions, given the objective chance. But if it is understood to mean a certain type of demoralization and dissolution of standards, carelessness in maintaining order in the household, even wanton disregard for the future usefulness of a certain part or accessory of the dwelling, then it seems to be quite plausible to suppose that such an attitude can contribute to the development and accentuation of serious conditions of disrepair. Just how significant such a factor is cannot be determined at this time. Such an attitude is probably most frequently found among the strata of poorly paid workers who already live in such buildings as will fall most easily into a state of disrepair.

## Occupancy and Density

Another index of the housing standards of a family or a community is to be sought in the amount of space and possibilities of privacy which each dwelling unit offers to its occupants. The Real Property Inventory presents the most comprehensive study of density which has yet been made, and although it does not supply such information as the amount of floor space per person, it does offer some information on the number of persons per room. It classifies the various dwelling units as follows:

"Very spacious" refers to dwelling units having one-half person or less per room, which means that two or more rooms are available for each person living in the unit. The term "spacious" is applied to cases where there is from one-half to three-quarter persons per room; that is, dwelling units which have the equivalent of less than two rooms per person, yet where one and one-half rooms are available for each person. Residential units are characterized as having "adequate" spacing when they are listed with from three-quarters to one person per room, or when they contain one room or more for each occupant, though less than one and one-half rooms. The term "crowded" is used for units where there are two or less persons yet more than one person per room. A unit is designated as "overcrowded" when there are three or less persons, but more than two persons per room. The term "greatly overcrowded" refers to units having more than three persons per room.[32]

In the terms of this classification, 16.8 percent of the homes surveyed were crowded or worse. When broken down by city size and if the first and last categories are omitted, the percentage of crowded dwelling units decreases with size of city. Similarly, when broken down by degree of industrialization (tables 60 and 61) and dropping off the lowest and the highest classes which contain only one case each, there is a decrease in crowding with an increase in industrialization. If those relationships are at all significant, the results are contrary to what would be expected if one regards crowding as correlated with low economic status. Crowding might be expected to be more frequent in the larger cities where rents are higher, and the cities with the largest proportion of industrial workers might be thought of as having a larger proportion of persons in the low-income categories. Despite these objections to such a correlation, some support for it may be found in the fact that of the 24 cities in which at least 20 percent of the dwelling units are crowded or worse, 18 are in the South Atlantic, East South Central, and West South Central regions, most of which have large impoverished Negro or Mexican populations. The cities with more than 30 percent crowded are:

| | *Percent* |
|---|---|
| Atlanta, Ga | 30.3 |
| Charleston, S. C | 40.4 |
| Columbia, S. C | 32.4 |
| Santa Fe, N. Mex | 35.1 |

[32] *Op. cit.*, p. 12.

TABLE 60.—*Percentage of dwelling units with density greater than 1 person per room by city size groups: 1934* [1]

| Size of city | Percentage of dwelling units with density greater than 1 person per room | Size of city | Percentage of dwelling units with density greater than 1 person per room |
|---|---|---|---|
| 10,000 to 25,000 | 16.50 | 100,000 to 250,000 | 17.25 |
| 25,000 to 50,000 | 21.00 | 250,000 to 500,000 | 12.50 |
| 50,000 to 100,000 | 16.50 | 500,000 and over | 16.50 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

TABLE 61.—*Percentage dwelling units which are crowded by degree of industrialization: 1934* [1]

| Percent employed in manufacturing and mechanical industries | Percentage dwelling units which are crowded | Percent employed in manufacturing and mechanical industries | Percentage dwelling units which are crowded |
|---|---|---|---|
| 5.0 to 14.99 | 29.00 | 35.0 to 44.0 | 13.20 |
| 15.0 to 24.99 | 22.35 | 45.0 to 54.0 | 13.00 |
| 25.0 to 34.0 | 17.00 | 55.0 to 64.0 | 15.00 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

TABLE 62.—*Number and percent of dwelling units with ½ person per room by geographic divisions: 1934* [1]

| Area | Number and percent of dwelling units with ½ person per room | |
|---|---|---|
| | Number | Percent |
| Total | 703,635 | 28.07 |
| New England | 90,074 | 32.10 |
| Middle Atlantic | 63,407 | 36.63 |
| East North Central | 158,918 | 30.78 |
| West North Central | 106,597 | 28.58 |
| South Atlantic | 76,219 | 23.91 |
| East South Central | 27,096 | 19.12 |
| West South Central | 45,633 | 22.62 |
| Mountain | 25,311 | 23.19 |
| Pacific | 111,166 | 34.97 |

[1] Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

The situation in these regions is further revealed in table 62, which gives the percentage of dwelling units with not more than one-half person per room by region. The East South Central is lowest, followed by the West South Central, South Atlantic, and Mountain regions. The Mountain States include New Mexico and Arizona, both of which have large nonwhite populations which are on a very low level economically.

Another aspect of the density problem which was covered by the Real Property Inventory is that involving "extra families." By this term is meant those "families who do not support a domestic establishment of their own but who share dwelling units with other families." No distinction is made between those families doubled up by preference and those forced by necessity so to live.[33] For this reason extra families cannot be taken either as an index of crowding, of deprivations caused by the depression, or of general inconvenience with respect to lack of privacy, etc. However, there can be no doubt that one of the more important motives for doubling up lies in the reduction in income as a result of which many families were forced to give up their own homes and to live with the families of friends or relatives who were willing to shelter them until they would again be able to maintain themselves.[34]

At any rate, of all the families covered in the survey, 7.01 percent were living with other families. The cities in the East South Central, South Atlantic, and West South Central regions had the largest percentages, while New England had the smallest (cf. table 63). There is a small but irregular increase of doubling up with increase in city size and a broken decrease with increase in degree of industrialization.

TABLE 63.—*Number and percent of extra families in dwelling units by geographic divisions: 1934* [1]

| Geographic division | Total number of families. Real Property Inventory | Extra families | |
|---|---|---|---|
| | | Number | Percent |
| Total | 2,612,107 | 183,200 | 7.01 |
| New England | 294,752 | 14,124 | 4.79 |
| Middle Atlantic | 183,274 | 10,156 | 5.54 |
| East North Central | 557,648 | 41,355 | 7.42 |
| West North Central | 399,530 | 26,510 | 6.64 |
| South Atlantic | 351,004 | 32,307 | 9.20 |
| East South Central | 156,850 | 15,122 | 9.64 |
| West South Central | 222,746 | 20,090 | 9.02 |
| Mountain | 111,138 | 6,218 | 5.59 |
| Pacific | 335,165 | 17,318 | 5.17 |

[1] Source: Taken from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory* (Washington, D. C., 1935).

What seems to be significant factors here, in addition to the necessity for giving up a household which has already been established, are (*a*) newly married couples who have never had a household of their own and who have lived with the parents-in-law from the very beginning of their married life, and (*b*) the existence of a "large family system" which is probably much more common in rural than in urban areas. In the Southern States, where urbanization is a much more recent phenomenon than it is in the North, it is quite likely that a persistence of rural traits, among them a positive attitude toward the "large family system," is conducive to "doubling up" as a response to economic deprivation.

[33] *Ibid.*, p. 13.

[34] L. N. Bloomberg, "Undoubling of Families and the Demand for Housing Units", *Journal of Land and Public Utility Economics*, XII (February 1936), pp. 80 ff.

**Vacancies**

The percentage of existing residential units which are unoccupied is an important factor in the determination of the state of housing accomodations at a given time. The number or percentage of vacancies calls attention to facts which are significant not in showing how people actually live but in revealing something of (1) the extent to which houses are available; (2) the extent to which within certain income groups persons have a certain range of choice as to the exact location and type of house they will live in; and (3) the distance which a community is from a housing shortage at any given time.

It is the consensus of housing experts that about 5 percent of the dwellings of a community should be vacant at any time to allow a margin for population increase and a range of choice for those who are not entirely satisfied with their present quarters, as well as to prevent a crisis which would cause rents to shoot upward. The actual causes for an excess of vacancies may be due to a variety of reasons: Overbuilding, a declining population, doubling up due to a depression, or such serious and widespread dilapidation that a large percentage of the houses are rendered uninhabitable.

According to the Real Property Inventory, 204,228 dwelling units, or approximately 8 percent, were vacant in 1934. Of these 8.25 percent were unfit for use [35] and 23.91 percent were in need of major repairs. Thus almost one-third of the vacant units were in serious disrepair as compared with less than one-sixth of the occupied ones. The percentage which needed minor repairs was 42.39 percent or only slightly less than the occupied dwellings in the same category (44.52 percent). On the other hand, only 25.25 percent of the vacancies were in good condition as compared with 38.97 percent among those which were occupied. This is a clear indication that the unoccupied residences were not all habitable and wholesome homes which were merely somewhat less desirable than those which were occupied, but rather that a large proportion of them were simply not fit for human occupancy.

If any validity is to be attributed to table 64 it seems plausible to say that the more industrialized a city (and therefore the larger the ratio of the economically less privileged), the less will be the percentage of vacancies, since persons with low incomes are unable to command new homes and can pay only for those for which rents are lowest. As long as delapidated houses bring some return and as long as local officials are lax in enforcing sanitary and other housing laws, such buildings instead of being vacated are occupied.

Similarly, the larger ratio of vacancies in more well-to-do communities (which we may suppose some of the less industrialized ones to be) may be due to relative overbuilding in response to the promise of a market for new homes.

[35] The occupied units were unfit for use only to the extent of 1.72 percent.

TABLE 64.—*Percentage of dwelling units vacant, by degree of industrialization: 1934* [1]

| Percent employed in manufacturing and mechanical industries | Percentage of dwelling units vacant | Percent employed in manufacturing and mechanical industries | Percentage of dwelling units vacant |
|---|---|---|---|
| 5.0 to 14.99 | 5.50 | 35.0 to 44.0 | 6.00 |
| 15.0 to 24.99 | 7.38 | 45.0 to 54.0 | 6.50 |
| 25.0 to 34.0 | 7.50 | 55.0 to 64.0 | 3.50 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, *Department of Commerce, Real Property Inventory, 1934* (Washington, 1935).

The same type of relationship might of course hold within a single community since the determining factor is the economic status of the various sections of the community. Thus there may be a large ratio of vacancies among dwelling units available to the higher economic strata while the lower ones may be suffering from a shortage. The following situation in Philadelphia illustrates such a possibility:

> In his report (Report of the Philadelphia Housing Association for 1926, p. 33), Mr. Bernard J. Newman has a table showing that 74 percent of the new houses priced at $5,000 and under were sold and occupied at the end of the year, against 54 percent of those priced between $5,000 and $6,000, 48 percent of those between $6,000 and $7,000, and so on to the $10,000 and $11,000 class where only 20 percent had been disposed of. He pointed out that the demand at the higher income levels was evidently nearly satisfied while the demand further down had hardly been tapped.[36]

According to table 65 the percentage of vacancies shows more or less of a tendency to increase with size of city. Such a situation may be due to overbuilding during the period of rapid growth during the twenties, or again it may be due in part to the possibility discussed above that the higher the economic level of a potential market, the more inclined will builders be to begin operations; and since large cities have a higher middle-class component than smaller ones, it seems possible that builders were more attracted by the large cities, while they neglected those which offered less profitable investments.

TABLE 65.—*Percentage of dwelling units vacant, by city size groups: 1934* [1]

| Size of city | Percentage of dwelling units vacant | Size of city | Percentage of dwelling units vacant |
|---|---|---|---|
| 10,000 to 25,000 | 7.00 | 100,000 to 250,000 | 7.00 |
| 25,000 to 50,000 | 6.25 | 250,000 to 500,000 | 8.50 |
| 50,000 to 100,000 | 6.25 | 500,000 and over | 9.50 |

[1] Source: Compiled from Bureau of Foreign and Domestic Commerce, Department of Commerce, *Real Property Inventory, 1934* (Washington, 1935).

[36] E. E. Wood, *Recent Trends in American Housing* (New York, 1931), p. 41.

# PART II—SECTION 3
# HOUSING AND THE COMMUNITY

## Definition of a Slum

The foregoing section has served to give a quantitative view of the housing conditions of the urban population of the United States. Such a mode of presentation fails, however, to indicate the degree to which the various characteristics are associated with one another, or the extent to which they affect various sections of the population. It is in the socially and spatially disproportionate distribution of advantages and disadvantages that we find one of the most serious of the immediately tangible evils of modern urban life. It is not, of course, as if the even distribution of certain deprivations throughout all social strata would not also be a problem, but the fact that there is an extremely high concentration of most of them within a single one means that this section of the community in particular must labor under extraordinary difficulties in the competition for the desirable goods of modern civilization.

Various attempts have been made to define the slum. Older writings on the subject did not, on the whole, go beyond dictionary definitions such as "a foul back street of a city, especially one with a squalid and even vicious population," "a low or squalid neighborhood," "a dirty back street, court or alley in the city." These definitions touch only on incidental features of the slum. More recently definitions of the slum have stressed density of population, congestion, and overcrowding. One of the better definitions is that used in the British Housing Act of 1930, which characterizes slums as areas where the "dwelling houses are by reason of disrepair or sanitary defects unfit for human habitation—or by narrowness or bad arrangement of streets are dangerous or injurious to health of inhabitants." Concerning this definition one of the authorities on the slum problem says, "This definition reflects recognition of land crowding, lack of light and air, inadequate sanitation, and bad management as factors in addition to filth, which was the dominating conception of earlier definitions." [1]

A more dynamic conception of the slum is the one which has been offered by sociologists which, while it does not go into detail about the specific housing features of the slum by linking up the emergence and perpetuation of the slum with city growth, makes the slum housing conditions more intelligible. This definition is based on a general theory of city growth and of the spatial distribution of social functions in the city, which is best summarized by E. W. Burgess as follows:

> Studies of urban growth reveal that the city grows outward from the central business district in a series of expanding zones. There is a "zone of transition" encircling the downtown area. This is the area of deterioration, the so-called slum, created in large part by the invasion of business and light manufacture. A third area is inhabited by workers in industry who have escaped from the area of deterioration and who desire to live within easy access of their work. Beyond this zone is the residential area of high-class apartment buildings or of exclusive restricted districts of single-family dwellings. Still farther out beyond the city limits is the commuters' zone or suburban areas or satellite cities within a 60-minute ride of the central business district.[2]
>
> While various topographical factors may distort this pattern, the principles which underlie it continue to operate even though certain additional factors enter into the situation. Taking this approach as a basis, the slums has been further described as follows:
>
> The slum is a distinctive area of disintegration and disorganization. It is an area in which encroaching business lends a speculative value to the land. But the rents are low; for while little business has actually come into the area it is no longer desirable for residential purposes. It is an area of dilapidated dwellings, many of which the owners, waiting to sell the land for commercial purposes, allow to deteriorate, asking just enough in rent to carry the taxes. Except for the sporadic building of factories and business blocks, no building goes on in the slum, and most of its structures have stood for a generation or more.
>
> Aside from a few marooned families, a large part of the native population is transient; prostitutes, criminals, outlaws, hobos, foreigners who come to make a fortune as we used to go West, and expect to return to the old country as soon as they make their "stake," who are not really a part of American life and who wish to live in the city as cheaply as possible, live in the lodging houses of the slum. Here, too, are the areas of immigrant first settlement * * *.
>
> The slum gradually acquires a character distinctly different from that of other areas of the city through a cumulative process of natural selection that is continually going on as the more ambitious and energetic keep moving out and the unadjusted, the dregs and the outlaws accumulate. This is particularly noticeable in the more static European cities. In America where competition is uncontrolled this selective process lends the slum a submerged aspect. The city, as it grows, creates about its central business district a belt of bleak, barren, soot-begrimed, physically deteriorated neighborhoods. And in these neighborhoods, the undesirable and those of low economic status are segregated by the unremitting competition of the economic process in which land values and rentals and wages are fixed.[3]

This definition, valuable though it is, has certain limitations in that it refers only to a specific type of

[1] James Ford, *Slums and Housing* (Cambridge, 1936), p. 4.

[2] E. W. Burgess, "Can Neighborhood Work Have a Scientific Basis?" in R. E. Park, E. W. Burgess, and R. D. McKenzie, *The City* (Chicago, 1925), p. 148.

[3] Harvey W. Zorbaugh, *The Gold Coast and the Slum; A Sociological Study of Chicago's Near North Side* (Chicago, 1929), pp. 128–129.

slum, namely, the one which surrounds the central business district in almost every American city. That there are large areas in American cities where housing conditions are poor and which are lacking in some of the other characteristics enumerated, there can be little doubt. Residential districts in outlying industrial sections of the city can scarcely be comprehended in what is called the zone of transition as understood in terms of the concentric-circle scheme. When the "zone of transition" is thought of simply as the area in which a specific process—invasion—is taking place, instead of as a definite point in space, the concept remains a highly useful one in the analysis of slum formation. From the point of view of housing, the slum which develops in an area of transition is only one type. There are also the slums which are built as slums,[4] notably in New York City, and those which, as soon as they are touched by invasion, sink to the slum level.

These attempts at definition are not, however, fully satisfactory as regards an analysis of the housing situation, since in their formulation housing conditions play only a secondary role, the chief focus of attention being either a certain area in the city (the area surrounding the central business district) and disregarding poor housing conditions in other areas, or on certain types of social conduct, such as unconventionality, criminal infringement on moral and legal norms, and personal disorganization, etc. But the chief reason such an approach is unsatisfactory is that although it analyzes how certain types of individuals and groups come to have certain types of housing, it pays no attention to the possible influence of housing on the individuals or groups in question. On the other hand such an approach has the merit of discriminating between the factors that operate through housing and those that operate independently of housing in bringing about certain types of behavior. An approximation to such a view is the following:

An adequate definition of the slum must indicate the typical sets of factors that have brought it about in its various manifestations, which processes have selected its present inhabitants, and what are the influences which it exercises on those who live in it.

James Ford says:

The fundamental difficulty with all the above definitions (i. e., those of an ecological-sociological character) is that they say too much. There is moreover too much emphasis, often mistaken, upon local peculiarities and upon factors social rather than physical. The slum tends to be defined in terms of more or less accurately observed consequences. To conform with contemporary usage, the emphasis instead should be upon conditions of structure, age, and upkeep. We may therefore better define a blighted district as any area in which the large majority of buildings, whether commercial, industrial, or residential, are old, and on which fundamental repairs are no longer being made.

Any area of deteriorated housing in which there is a poor upkeep of houses and premises is a blighted district and a potential slum. Any area of old, neglected, and deteriorated housing or of new markedly substandard housing is a slum as soon as it becomes unsanitary or otherwise injurious to its occupants. The slum is thus characterized by age, neglect, and low standards or practices in sanitation. The area may be a city block or less in size or a large district covering scores or hundreds of blocks. The slum is not necessarily an area in which land values are declining, but it is rather an area in which there is so little new construction of residences that the tone of the area is little affected.

Characteristic of slum areas are types of house design and construction of earlier periods—now outmoded—inadequate provisions for sanitation, lighting, and heating, obsolescent fixtures, dilapidated and poor upkeep. Ordinarily but not necessarily there would also be an overcrowding of rooms and poor maintenance of apartments, premises, and streets as well as of buildings. Often also there are present neighborhood nuisances such as factory smoke and fumes, elevated railroads (especially in New York and Boston), railroad tracks, canals, dumps, swamps (usually in the smaller cities), crowded streets, small stores and workshops with poor standards and poor upkeep, etc. * * *

(Summarizing) *The slum is a residential area* (comprising one or more lots, city blocks * * *) *in which the housing is deteriorated* (through poor upkeep ordinarily combined with obsolescence, age, depreciation, or change in consumer demand), *substandard* (owing to builders' or owners' ignorance of principles of construction, planning, equipment, and hygiene, or to the deliberate ignoring of such principles), or *unwholesome* (owing to narrowness of streets, crowding of buildings upon the land or proximity of nuisances such as noxious factories, elevated highways, overshadowing warehouses, railroads, dumps, swamps, foul rivers or canals). * * *[5]

## Poor Housing and Health

Inadequate housing is a problem to persons interested in social welfare not merely because it is unsightly and uncomfortable but because it is believed to be related in a prejudicial way to the health of the occupants. An immense amount of data has been collected which shows a high correlation between poor housing and inferior health. A few representative figures from various cities may be of value in indicating the relationship between housing and health.

The following indices of health are reported for poor housing areas in New York:[6]

[4] The late Henry Wright was of the opinion that "most usually * * * our worst slum conditions arise from altered or transitional neighborhood uses. Dilapidation arising from neglect is as common as any bad characteristic of the buildings themselves." He adds, however:

"There are, nevertheless, other instances in which stagnant areas have developed out of the underlying street pattern or the city plan. In such instances as the one at Evansville * * * and in the more widely spread Dallas slums, the infection has arisen at bad spots in the city pattern. In New Orleans, on the other hand, vast areas have a neglected slummy character arising from a faulty subdivision of land that is also common to other cities of the South. Salt Lake City suffers from an even larger square block of somewhat different character." (Henry Wright, *Rehousing Urban America* (New York, 1935), p. 8.)

[5] Ford, *op. cit.*, pp. 11–13.

[6] "Health and Housing in Harlem," *State of Affairs* (November 1936), pp. 10–11.

| | Rate per 1,000 population | | |
|---|---|---|---|
| | East Harlem | Central Harlem | Entire city |
| Death rate | 12.37 | 14.66 | 10.70 |
| Infant mortality rate (live births) | 77.00 | 94.00 | 55.00 |
| Maternal mortality | 6.80 | 11.50 | 5.80 |
| Pneumonia mortality | [1] 174.00 | [1] 180.00 | [1] 119.00 |
| Tuberculosis mortality | [1] 131.00 | [1] 247.00 | [1] 69.00 |

[1] Per 100,000 population.

Data showing the same type of coincidence were presented by Mr. Langdon Post in the hearings on the Wagner bill in 1936. He said at that time:

> We have the records on the old law tenement as against the new tenements. * * * Death from tuberculosis in the old law tenements is 220 percent higher than from death in the new; at the same time death from spinal meningitis is 247 percent higher in the old law tenements than in the new; deaths from all causes are 87 percent higher in the old law tenements than in the new.
>
> From these figures it can readily be seen that it is not just poverty which causes this, but it is the condition in which the people live, in my opinion.[7]

Health Commissioner John L. Rice, in his recent testimony before the New York City Housing Authority, stated concerning tuberculosis that in the last 25 years there has been a 50 percent reduction in the disease over the city as a whole but that no progress had been made in reducing it in the slums. In the course of the same hearings, Mr. C. B. Vladeck, a member of the Authority, presented the following data bearing on the difference in incidence of disease in old law (slum) and new law tenements: [8]

| | Old law tenements | New law tenements |
|---|---|---|
| Tuberculosis | 69.6 | 30.4 |
| Diphtheria | 60.8 | 39.2 |
| Cerebro-spinal meningitis | 68.7 | 31.3 |

Similar situations were reported for other cities, including Philadelphia (table 66), Detroit (table 67), Cleveland (table 68), Boston (table 69), and other cities.

A more restricted area of Detroit which was chosen for clearance showed even more serious deviations from the city-wide rate. For this area the pneumonia rate was 217 per 100,000 as over against 74.3 per 100,000; the tuberculosis rate was 468 compared with 75.6; and the infant mortality rate 83 as compared with 57.7.

Crowding which may be regarded as an index of a slum has been shown to correlate with a high infant death rate. A study by Robert Morse Woodbury covering eight cities demonstrated that deaths from gastric-intestinal diseases and other epidemic diseases were most frequent in crowded dwellings (cf. table 70). The same type of relationship was established in a study in which the influence of such vari-

[7] *United States Housing Act of 1936*, Hearings before the Committee on Education and Labor, U. S. Senate, 74th Cong., 3d sess., S. 4424 (Washington, 1936), p. 54.

[8] *New York Times*, January 1, 1936.

TABLE 66.—*Areal distribution of cases of tuberculosis and of communicable diseases in Philadelphia: 1932* [1]

| Area | Population census | Area in acres | Cases of tuberculosis | | Cases of communicable diseases | |
|---|---|---|---|---|---|---|
| | | | Number | Rate | Number | Rate |
| Entire City | 1,950,961 | 83,008.0 | 15.000 | 7.68 | 25,290 | 11.94 |
| Total for 13 areas | 77,140 | 781.0 | 933 | 12.25 | 1,246 | 16.36 |
| Area: | | | | | | |
| 1 | 1,535 | 12.9 | 16 | 10.42 | 29 | 18.89 |
| 2 | 11,180 | 117.9 | 114 | 10.19 | 134 | 11.98 |
| 3 | 6,700 | 66.7 | 102 | 15.22 | 57 | 8.50 |
| 4 | 11,000 | 99.5 | 210 | 19.09 | 104 | 9.45 |
| 5 | 1,845 | 32.7 | 23 | 12.41 | 10 | 5.42 |
| 6 | 2,960 | 29.7 | 63 | 21.28 | 69 | 23.31 |
| 7 | 2,460 | 30.7 | 16 | 6.50 | 32 | 13.08 |
| 8 | 3,860 | 35.6 | 30 | 7.77 | 78 | 20.20 |
| 9 | 4,910 | 52.5 | 32 | 6.51 | 66 | 13.44 |
| 10 | 1,890 | 29.3 | 29 | 15.34 | 56 | 29.62 |
| 11 | 16,200 | 150.5 | 218 | 13.38 | 382 | 23.58 |
| 12 | 4,650 | 53.7 | 27 | 5.80 | 68 | 14.68 |
| 13 | 6,950 | 70.0 | 53 | 7.62 | 161 | 23.16 |

[1] Source: E. E. Wood, *Slums and Blighted Areas in the United States*, Housing Division Bulletin No. 1, Federal Emergency Administration of Public Works (Washington, 1935).

TABLE 67.—*Death rates from specified causes in Detroit: 1928* [1]

| Average number of persons per room | Infant deaths (per 1,000 births) | Death rates per 100,000 population | | | Deaths from all causes (per 1,000) |
|---|---|---|---|---|---|
| | | Tuberculosis | Pneumonia | Diphtheria | |
| 0.9 or more | 86 | 132 | 113 | 22 | 10.9 |
| 0.8 | 69 | 79 | 87 | 17 | 9.5 |
| 0.7 or less | 62 | 52 | 77 | 18 | 9.5 |

[1] Source: Cited by Rollo H. Britten, "The Relation Between Housing and Health," *Public Health Reports*, vol. 49, No. 44 (November 1934), p. 1302, from *City Health*, Report of Detroit Health Department for July–August 1929.

TABLE 68.—*Cleveland infant mortality (1928) excluding first month (per 1,000 births)* [1]

| Equivalent monthly rental (average) | Infant mortality rate | Equivalent monthly rental (average) | Infant mortality rate |
|---|---|---|---|
| Under $15 | 65 | $30 to $35 | 36 |
| $15 to $20 | 43 | $35 to $40 | 18 |
| $20 to $25 | 45 | $40 to $45 | 17 |
| $25 to $30 | 31 | | |

[1] Source: cf. Howard Whipple Green, *Population Characteristics by Census Tracts Cleveland, Ohio, 1930* (Cleveland, 1931) and *Infant Mortality and Economic Status* (Cleveland, 1932) cited by Rollo H. Britten, "The Relation Between Housing and Health," *Public Health Reports*, vol. 49, No. 44 (November 1934), pp. 1303 and 1310.

TABLE 69.—*Infant mortality rates, death rates, and tuberculosis rates in areas of Boston: 1930–31*

| Area | Infant mortality rates per 1,000 live births | Tuberculosis cases per 100,000 population | Tuberculosis death rates per 100,000 population |
|---|---|---|---|
| Boston | 63.0 | | |
| Charlestown [1] | 98.7 | 191.1 | 72.6 |
| South End [1] | 80.7 | 375.2 | 150.4 |
| North End [1] | 80.5 | 158.1 | 62.9 |
| South Boston [1] | 79.6 | 178.5 | 92.1 |
| East Boston [1] | 74.3 | 147.7 | 49.8 |
| Back Bay | 73.5 | 142.7 | 37.8 |
| Roxbury [2] | 62.3 | 173.9 | 69.4 |
| Dorchester, North | 60.8 | 124.5 | 43.3 |
| Brighton | 53.6 | 103.8 | 34.6 |
| Dorchester, South | 51.1 | 100.7 | 38.9 |
| Hyde Park | 46.2 | 120.4 | 38.7 |
| West Roxbury | 45.9 | 138.1 | 48.5 |
| Jamaica Plain | 45.1 | 111.1 | 58.3 |
| West End [1] [3] | 38.0 | 167.5 | 57.1 |

[1] The 6 areas with median rentals below $30 per month.

[2] Roxbury has a large Negro population, amounting to 13.7 percent of all the families living there.

[3] West End has the highest median rental of the 6 poor areas—$28.95 per month—and has within it a section with quite high housing standards.

Source: E. E. Wood, *Slums and Blighted Areas*, Housing Division Bulletin No. 1 Federal Emergency Administration of Public Works (Washington, 1935), pp. 57–58

TABLE 70.—*Infant mortality rate, by cause of death, and average number of persons per room: Infants in 7 cities who survived 2 weeks: 1928* [1]

| Average number of persons per room | Infants surviving 2 weeks | Infant deaths | Infant mortality rates | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | All causes | Gastric and intestinal | Respiratory | Early infancy | Epidemic and other communicable diseases | Other causes |
| Total | 20,698 | 1,566 | 75.7 | 31.8 | 18.3 | 9.1 | 6.4 | 10.1 |
| Less than 1 | 10,837 | 565 | 52.1 | 18.5 | 12.2 | 7.6 | 4.8 | 9.0 |
| 1 and less than 2 | 8,558 | 812 | 94.9 | 42.1 | 23.6 | 10.0 | 7.6 | 11.6 |
| 2 and over | 1,172 | 159 | 135.7 | 70.8 | 30.7 | 15.4 | 11.1 | 7.7 |
| Not reported | 131 | 30 | ------- | ------- | ------- | ------- | ------- | ------- |

[1] Source: from *Causal Factors in Infant Mortality*, Children's Bureau Publication No. 142 (1928), p. 125. Cited by *Housing and Child Welfare*, Federal Emergency Administration of Public Works, Housing Division (Washington, D. C., 1936), p. 7

ables as maternal nativity and father's earnings were held constant (cf. table 71).

The general consequences of bad housing for health is summarized by Dr. R. St. John MacDonald, who states that it leads to—

> * * * an increased mortality rate, a lessened expectation of life, an increased general death rate, an increased pulmonary tuberculosis death rate, an increased measles, whooping-cough and diphtheria death rate, an increased incidence of and death rate from rickets, an increased infant-mortality rate, an increased incidence of anemia and rheumatism, an increased incidence of all the common communicable diseases * * * an increased general deterioration in the health of the people leading to debility and poor physique.[9]



TABLE 71.—*Excess mortality in overcrowded dwellings, when effect of differences in father's earnings is eliminated: Infants born in 1915 to native white mothers who lived at least 2 weeks in dwellings with specified number of persons per room* [1]

| Earnings of father | Less than 1 person per room | 1 but less than 2 persons per room | 2 or more persons per room (107 cases) |
|---|---|---|---|
| Total | 4.6 | 8.6 | 14.0 |
| Under $450 | 7.5 | 15.1 | ---------- |
| $450 to $549 | 7.1 | 9.6 | ---------- |
| $550 to $649 | 6.9 | 8.3 | ---------- |
| $650 to $849 | 4.5 | 7.8 | ---------- |
| $850 to $1,249 | 3.8 | 5.8 | ---------- |
| $1,250 and over | 2.7 | 3.4 | ---------- |

[1] Source: From *Infant Mortality, Results of a Field Study in Baltimore, Md.*, Children's Bureau Publication No. 119 (1923), p. 111, cited by *Housing and Child Welfare*, Federal Emergency Administration of Public Works, Housing Division (Washington, D. C., 1936), p. 8.

While there can be no doubt concerning the fact that persons living under slum conditions suffer from poorer health than those living under more adequate housing conditions, some question may be raised as to whether and to what degree the high incidence of disease, and physical debility in the slums is due to housing conditions as such.

Certain diseases, the spread of which depends on contact, would certainly seem to be influenced by overcrowding. In this category would fall common colds, sore throats, bronchitis, influenza, diphtheria, scarlet fever, mumps, chickenpox, whooping cough, cerebral spinal fever, measles, pneumonia, and tuberculosis. Even here, of course, crowding alone cannot be blamed for initiating the disease, but it undoubtedly plays a significant role in facilitating its spread.

Tuberculosis, for example, has often been—

> * * * spoken of as a "house disease." It is in fact a family affair because it is caught by contact with an open case. One who lives in close contact with an open case of pulmonary tuberculosis without proper precaution, runs a great hazard of becoming infected and reinfected. This is especially disastrous with young children and the danger increases if the house is crowded and otherwise unsanitary. The house itself need not be blamed so much for the spread of tuberculosis as its occupants. Tuberculosis will spread from person to person in a palace as well as in a tenement or hut.[10]

Although respiratory diseases, especially pulmonary tuberculosis, are most highly concentrated in slum areas, their causal dependency on housing conditions as such is not definitely established.

[9] *National Health Review*, III (October 1935), p. 77.

[10] Housing and the Community, in *Housing the Community, Home Repair and Remodeling*, ed. by John M. Gries and James Ford, vol. IV of *The President's Conference on Home Building and Home Ownership* (Washington), p. 6.

In considering the problem of tuberculosis in its relation to housing, it is necessary to bear in mind that the comparative poverty of the slum dweller may mean imperfect nutrition, that the noise of the tenement districts may mean imperfect sleep, that the sunlessness of lower floors of tenement houses may mean reduced resistance. Even though subsequent studies may definitely prove that the house is not a means of transmission of tubercle bacilli, there will still remain the possibility that there is a relation between housing and pulmonary tuberculosis because of reduced resistance caused by inadequate sleep and lack of sunshine and clean air.[11]

Parasitic diseases seem to be more closely connected in a causal manner with housing conditions than most of the others. One of the major types of parasitic disease in the United States is hookworm, but the preconditions for its transmission are practically entirely eliminated in cities where excrement is disposed of through either flush toilets or privies. It is, therefore, a disease which exists most easily in rural areas where the sanitary disposal of sewage is most retarded.

Malaria is largely a function of certain community conditions, such as swamps and stagnant water, but it is connected with housing conditions in the sense that houses which are not properly screened are more easily accessible to malaria-bearing mosquitoes.

Diseases may also be carried by rats and insects and the extent to which houses are built and maintained in such a way as to preclude the existence of these has a possible relationship to the health of the occupants. Many old tenement houses and single-family homes in old sections of the city are infested with rats which not only can carry plague germs but may also go so far as to attack sleeping persons, especially infants. Flies are capable of carrying various types of virulent bacteria, and the degree to which they thrive and their effect is to a large extent a function of the screenlessness of the house. They are attracted and their effectiveness is fostered by open garbage piles and accumulations of filth, both in the house and outside of it, and these conditions are dependent not so much on the actual state of housing (excluding of course privy vaults) as on the sanitary habits, the standard and modes of living, prevailing in the neighborhood.

The transmission of parasites is greatly facilitated by the existence of toilet facilities which must be used by more than one family. This condition is also of importance in the transmission of syphilis and gonorrhea germs, which can live outside the body for several hours in a dark and damp environment. Venereal diseases are also easily transmitted under conditions of crowding when several persons have to sleep in the same bed.

We have thus far seen that despite the spatial coincidence of poor health and housing, a direct causal relationship between them is not definitely established. In many cases they are both functions of a more fundamental factor, namely, social-economic status. Ill health may be caused, among other things, by malnutrition, overwork, ignorance of or indifference to easily practicable hygienic practices, such as the careful disposal of garbage, cleanliness in the preparation of food, and frequent ablutions, and in some of them, especially the last two, an adequate and easily accessible water supply is indispensable, in which case poor housing with its insufficient provision of running water can play a considerable role. In other cases, however, as in the first three mentioned above, nonhousing factors seem to be most important. Certainly the economic inaccessibility of suitable medical attention, which is the common lot of the low-paid workers of the United States, cannot be attributed to poor housing, nor can culturally derived customs which are unhygienic and which persist even where hygienic facilities are easily at hand, be laid at the door of poor housing. If poor ventilation, lack of sunlight, and inadequate heat contribute together with other factors to ill health, then there can be little doubt that housing does play some part in health, although its exact extent cannot be determined.[12]

In the light of available evidence the conclusion reached by James Ford appears to be fairly tenable:

Good housing is most effective in the prevention of disease, in all probability, not so much because it provides means of reducing contagion or destroying germs as because of the part which it may play in the building up of resistance. Human beings vary quite considerably in their relative constitutional immunity to specific diseases, but a given individual's susceptibility to many diseases, as for example, tuberculosis, may be considerably affected by his mode of living. Resistance may be reduced by overwork, undernourishment, abuse of alcohol or certain other poisons, and apparently also by inadequate or inappropriate exercise. It is probable also that the sunshine plays a quite important part in increasing human resistance. The quality of the blood and the number of phagocytes, or white blood corpuscles, which are among the most important of the body's defensive agents against invading disease organisms, may be increased rapidly by exposure of the body to sunshine. In-

[11] Ford, *op. cit.*, pp. 390–94.

[12] One study which supports the contention that housing conditions are an independent variable in health was made in Liverpool, England, where the death, tuberculosis, and infant mortality rates for the same population were compared before and after rehousing in municipally constructed dwellings. The rates for the period before demolition cover a span of 3 years and those after demolition also cover 3 years (1916–18). Deaths from all causes per 1,000 population were 37 before reconstruction and 26.6 after; deaths from tuberculosis per 1,000 population were 4 before and 1.9 after; infant mortality per 1,000 births, 259 before and 162 after.

This study has certain deficiencies in that it does not indicate to what extent the age, sex, and economic composition of the population after reconstruction was the same as that before. (The only tenants accepted in the new houses were those who had previously been living on the same site. This does not account, however, for those who were not accepted and who moved elsewhere.) A further deficiency is that it does not make explicit whether real wages, etc., were the same for the two periods studied.

If those who were permitted to live in the new buildings were from the upper economic stratum of the previous population—concerning which no data are given—then the improvement in health rates in the area may be due merely to an exclusion of those who formerly pulled them down. But if the population of the second period is substantially the same as it was in the first period, then the beneficial effects of rehousing are demonstrated (Rollo H. Britten, "The Relation Between Housing and Health," *Public Health Reports*, vol. 49, No. 44 (November 1934), pp. 1303–1304).

sofar as improved housing tends therefore to increase the amount of fresh air and of sunshine in the homes of all classes, it presumably tends to increase resistance to disease. * * *

It should be understood that housing conditions are never the sole cause of disease. There may be a constitutional predisposition, hereditary or acquired. In the case of infectious diseases, the germ must be present and ingested in infective quantities. Each illness is a result of the interplay of many factors operating within the individual and within his physical and social environment. Medical specialists disagree as to the mode of infection or acquirement of many diseases * * * (nevertheless) * * * bad housing conditions of various sorts are factors in the reduction of health and in the spread of a variety of diseases. Improvement of housing conditions will serve to reduce the volume of preventable diseases and accidents.[13]

[13] Ford, *op. cit.*, pp. 396–7.

# PART II—SECTION 4
# HOUSING AND CONDUCT[1]

The slum population almost since its emergence as a problem to those concerned with the public welfare has been regarded as "the dangerous classes." [2] In the entire literature on slums and poverty one rarely finds a treatise which fails to deal with the demoralization of the slum dwellers, their deviations from the moral norms of conventional society, the high degree of criminality, and moral degeneracy to be found among them, etc. More recent studies have confirmed the impressions of the earlier investigators, and there now exists a whole series of highly reliable studies which show the disproportionate concentration of delinquent and criminal behavior in those areas of the city characterized by low median rentals, poor housing conditions, and low income.[3] The results of some of these studies are presented below:

The Committee on Crime and Delinquency in its Report to the New York City Housing Authority says:

> Most offender concentrations occur in Manhattan. They coincide with population congestion, vary in degree of severity, and are mainly in Harlem and the lower East Side. Although largely within, they are not confined exclusively to substandard areas.
>
> The slum areas collectively have higher offender ratios to population and to the square block than the nonslum sections of Manhattan. The incidence rates of juvenile delinquency in the slum are high and suggest the possibility that adult patterns of misconduct are emulated freely.
>
> One-third the total number of felons convicted in Manhattan and Brooklyn during 1930 resided in the substandard areas of the first named borough.

The higher incidence rates of crime and juvenile delinquency indicate that the substandard ones are the major delinquency areas.[4]

The marked superiority of the nonslum areas with respect to relative freedom from transgressions against the law is revealed by table 71*a*. The slum areas have higher rates per thousand population for each of the five classes of convictions. This is true for Brooklyn as well as for Manhattan, and if we exclude as relatively unimportant the possibility that persons committing the same types of crimes in nonslum areas are not so likely to be arrested or convicted, then there can be

TABLE 71*a*.—*Comparison of the number of criminal offenders in slum areas and nonslum areas of Manhattan and Brooklyn*

| Offenders | Actual number studied | Percent of total | Per 1,000 population | Per square block |
|---|---|---|---|---|
| | **Offender frequency in Manhattan slum area** | | | |
| Arrests | 34,375 | 31.0 | 42.96 | 31.86 |
| Convictions: | | | | |
| Juvenile delinquents | 1,107 | 30.0 | 8.04 | 1.02 |
| Female offenders | 1,177 | 38.0 | 3.68 | 1.09 |
| Petty offenders | 10,770 | 27.0 | 16.25 | 10.00 |
| Misdemeanants | 3,460 | 30.0 | 5.02 | 3.20 |
| Felons | 596 | 33.0 | .90 | .55 |
| Total | 17,110 | | | |
| Median rate | | 28.5 | 21.38 | 15.86 |
| | **Offender frequency in Manhattan nonslum area** | | | |
| Arrests | 25,357 | 22.0 | 28.12 | 15.79 |
| Convictions: | | | | |
| Juvenile delinquents | 470 | 13.0 | 4.59 | .29 |
| Female offenders | 914 | 29.0 | 2.25 | .57 |
| Petty offenders | 9,618 | 24.0 | 12.03 | 5.99 |
| Misdemeanants | 2,593 | 23.0 | 3.24 | 1.62 |
| Felons | 452 | 25.0 | .57 | .28 |
| Total | 14,047 | | | |
| Median rate | | 23.4 | 15.58 | 8.75 |
| | **Offender frequency in Brooklyn slum area** | | | |
| Arrests | 3,705 | 3.0 | 28.95 | 7.50 |
| Convictions: | | | | |
| Juvenile delinquents | 226 | 6.0 | 7.62 | .46 |
| Female offenders | 95 | 3.0 | 2.05 | .19 |
| Petty offenders | 1,286 | 3.0 | 13.08 | 2.60 |
| Misdemeanants | 378 | 3.0 | 3.85 | .76 |
| Felons | 57 | 3.0 | .58 | .12 |
| Total | 2,042 | | | |
| Median rate | | 3.4 | 15.96 | 3.59 |
| | **Offender frequency in Brooklyn nonslum area** | | | |
| Arrests | 35,447 | 31.5 | 16.67 | 4.66 |
| Convictions: | | | | |
| Juvenile delinquents | 1,857 | 49.5 | 4.75 | .24 |
| Female offenders | 553 | 18.0 | .64 | .07 |
| Petty offenders | 12,224 | 30.5 | 7.05 | 1.61 |
| Misdemeanants | 3,328 | 29.0 | 1.92 | .44 |
| Felons | 489 | 26.5 | .28 | .06 |
| Total | 18,451 | | | |
| Median rate | | 30.8 | 8.68 | 2.42 |

Source: Adapted from I. W. Halpern, J. N. Stanislaus, and Bernard Botein. *Report to the New York City Housing Authority;* James Ford, *The Slums and Crime* (New York, 1934), pp. 400–408.

[1] Cf. Vol. I, Part V, of the Supplementary Report of the ——— Committee.

[2] Cf. Rigaudias-Weiss, *Les Enquêtes Ouvrières en France entre 1830 et 1848* (Paris, 1936).

[3] Clifford R. Shaw, et al. *Delinquency Areas: A Study of the Geographic Distribution of School Truants, Juvenile Delinquents, and Adult Offenders in Chicago* (Chicago, 1929).

[4] Adapted from I. W. Halpern, J. N. Stanislaus, and Bernard Botein *Report to the New York City Housing Authority;* James Ford, *The Slums and Crime* (New York, 1934), pp. 400–8.

little doubt that criminal and delinquent behavior are more frequent in the slum than in other areas.

The extent of the concentration of delinquency in Chicago is shown by a study made in 1926. The 113 square miles that make up the city were arranged in a series going from the area with the lowest delinquency rate to the one with the highest. The areas were then divided into four equal groups. The results are contained in table 72.

When the areas are arranged in four sections according to rates, each containing the same number of delinquents, the high degree of concentration is revealed from another angle (table 73).

TABLE 72.—*Percentage distribution of delinquents, population and city area in each one-fourth of the 113 square mile areas grouped on the basis of the magnitude of the rates in the 1926 police series* [1]

| Quartile grouping of areas | Percentage of delinquencies | Percentage of population | Percentage of city area |
|---|---|---|---|
| Fourth or upper one-quarter of the 113 areas | 54.9 | 21.8 | 22.4 |
| Third one-quarter of the 113 areas | 30.4 | 27.1 | 26.6 |
| Second one-quarter of the 113 areas | 10.9 | 26.2 | 19.2 |
| First or lower one-quarter of the 113 areas | 3.8 | 24.9 | 31.8 |
| Total | 100.0 | 100.0 | 100.0 |

[1] Source: Taken from Clifford R. Shaw et al., *Delinquency Areas: A Study of the Geographic Distribution of School Truants, Juvenile Delinquents, and Adult Offenders in Chicago* (Chicago, 1927), p. 37.

TABLE 73.—*Percentage distribution of population and city area when the 9,243 delinquents are divided into 4 equal groups on the basis of the magnitude of the rates of delinquents in the 1926 police series* [1]

| Quartile grouping of delinquents | Percentage of population | Percentage of city area |
|---|---|---|
| Fourth, or upper, one-quarter of the 9,243 delinquents | 7.0 | 5.8 |
| Third one-quarter of the 9,243 delinquents | 11.7 | 13.6 |
| Second one-quarter of the 9,243 delinquents | 18.1 | 17.4 |
| First, or lower, one-quarter of the 9'243 delinquents | 63.2 | 80.6 |
| Total | 100.0 | 100.0 |

[1] Source: Taken from Clifford Shaw et al., *Delinquency Areas: A Study of the Geographic Distribution of School Truants, Juvenile Delinquents, and Adult Offenders in Chicago* (Chicago, 1927), p. 38.

TABLE 74.—*Relationship between rates of delinquents and percentage increase and decrease of population* [1]

| Population change | 1916 police rates | 1917–23 juvenile court rates | 1917–23 commitment rates |
|---|---|---|---|
| Areas decreasing— | | | |
| 20 percent and over | 11.0 | 9.7 | 3.3 |
| 0 to 20 percent | 10.6 | 8.6 | 3.1 |
| Areas increasing— | | | |
| 0 to 20 percent | 4.9 | 5.3 | 1.6 |
| 20 to 40 percent | 4.7 | 4.0 | 1.3 |
| 40 percent and over | 2.9 | 3.6 | 1.0 |

[1] Source: Taken from Clifford R. Shaw et al., *Delinquency Areas: A Study of the Geographic Distribution of School Truants, Juvenile Delinquents, and Adult Offenders in Chicago* (Chicago, 1927), p. 71.

The concentration of delinquency in slum areas is more explicitly demonstrated in table 74, where we take decreasing population as an index of a slum situation.

Similar results are obtained from comparable studies in Philadelphia, Richmond, Cleveland, Birmingham, Denver, and Seattle. Other studies were made in New York, Boston, Washington, D. C., Detroit, Cincinnati, and certain New Jersey cities. The results of the Washington, D. C., and New Jersey studies are given in tables 94 and 95, respectfully.

TABLE 75.—*Distribution of housing complaints per 1,000 population and adult delinquency in 13 sites in Philadelphia*

| | Housing complaints, 1932 | | Adult delinquency (includes 13 classifications of crime, i. e. felons)—1934 | |
|---|---|---|---|---|
| | Number | Rate | Number | Rate |
| Entire city | 25,024 | 12.82 | 7,540 | 3.86 |
| Total for 13 sites | 2,877 | 37.78 | 653 | 8.58 |
| Site 1 | 32 | 20.84 | 6 | 3.91 |
| Site 2 | 525 | 46.95 | 90 | 8.05 |
| Site 3 | 366 | 54.62 | 99 | 14.78 |
| Site 4 | 654 | 59.45 | 133 | 12.09 |
| Site 5 | 40 | 21.68 | 27 | 14.63 |
| Site 6 | 236 | 79.72 | 63 | 21.28 |
| Site 7 | 39 | 15.85 | 14 | 5.69 |
| Site 8 | 114 | 29.53 | 29 | 7.51 |
| Site 9 | 162 | 32.99 | 43 | 8.76 |
| Site 10 | 36 | 19.04 | 17 | 9.00 |
| Site 11 | 461 | 28.45 | 97 | 5.99 |
| Site 12 | 53 | 11.39 | 11 | 2.37 |
| Site 13 | 159 | 22.87 | 24 | 3.45 |

Source: Adapted from E. E. Wood, *Slums and Blighted Areas*, Housing Division Bulletin No. 1, Federal Emergency Administration of Public Works (Washington, D. C., 1935), p. 47.

TABLE 76.—*Delinquency rates in the specified age groups by 14 health and welfare areas in Boston: 1930–31*

| Health and welfare area | Young delinquents 7–16 per 1,000 population 7–16 years old | Young delinquents 17–20 per 1,000 population 17–20 years old |
|---|---|---|
| West End [1] | 38.5 | 129.8 |
| East Boston [1] | 34.2 | 87.2 |
| Charlestown [1] | 31.1 | 118.4 |
| North End [1] | 30.8 | 102.1 |
| South End [1] | 27.5 | 113.9 |
| South Boston [1] | 26.0 | 130.1 |
| Back Bay | 19.5 | 70.1 |
| Roxbury | 18.4 | 94.1 |
| Dorchester North | 14.0 | 77.0 |
| Brighton | 13.6 | 66.2 |
| Jamaica Plain | 12.8 | 68.8 |
| Hyde Park | 11.8 | 73.1 |
| Dorchester South | 9.3 | 75.5 |
| West Roxbury | 8.9 | 61.5 |

[1] Six areas with median rentals under $30 per month.

Source: E. E. Wood, *Slums and Blighted Areas*, Housing Division Bulletin No. 1, Federal Emergency Administration of Public Works (Washington, D. C., 1935), pp. 57–58

TABLE 77.—*Adequacy of household space: 521 juvenile probationers and 819 school children, Washington, D. C.*

| Group | Total | Adequate | | Crowded | | Congested | |
|---|---|---|---|---|---|---|---|
| | | Number | Percent | Number | Percent | Number | Percent |
| White—Juvenile: | | | | | | | |
| Probationers | 161 | 45 | 28.0 | 73 | 45.3 | 43 | 26.7 |
| School children | 564 | 366 | 64.9 | 167 | 29.6 | 31 | 5.5 |
| Colored—Juvenile: | | | | | | | |
| Probationers | 360 | 99 | 27.5 | 158 | 43.9 | 103 | 28.6 |
| School children | 255 | 78 | 30.6 | 117 | 45.9 | 60 | 23.5 |

Source: From *The Relation Between Housing and Delinquency*, Federal Emergency Administration of Public Works, Housing Division (Washington, D. C., 1936), p. 64.

## Causal Factors Underlying Criminal and Delinquent Activity

The facts presented above with reference to the spatial relative concentration of criminal and delinquent behavior within certain restricted areas of American cities make it sufficiently clear that such behavior is not equally distributed through all sections of the population. Furthermore, our knowledge of the particular points and areas of concentration leaves little doubt that the slums are the "breeding places of crime." The problem to be discussed then is whether the housing conditions as such which are characteristic of the slum exercise a causative influence in the development of delinquency and criminality. The data presented in the foregoing pages do not lend support to an unqualified affirmative answer, although they do not by any means offer support to a negative one.

The areas where poor housing conditions predominate are also the concentration points of a large number of other phenomena, including among others, low income, irregular employment, extensive unemployment, illness, family disintegration, and strangeness to the urban and even to the American environment. It is as part of a larger and more inclusive process that poorly paid and unskilled workers, recent immigrants, and the constantly dependent come to take up residence in the slums. The chief reason is that rents there are relatively lower and access to place of work is easier. There is also the purely historical supplementary factor that immigrants from abroad tend to settle in sections where their countrymen have already established themselves and set up once more the institutions required for the maintenance of communal life.

It is therefore necessary to keep these factors in view when we seek to reconstruct the causal elements underlying criminal and delinquent activity.

Congestion may be thought to have a certain significance through the following channels: When there is little space indoors for children to play and in which to entertain their friends, it is almost inevitable that they will seek an outlet for their desire to play outside the home in the streets, alleys, and basement clubs. The adolescent seeking status in a group and finding himself presented with delinquent patterns of conduct as models for emulation will be disposed to follow the path which is most easily accessible and which seems to offer possibilities of a subjectively satisfactory social adjustment. This type of analysis of the role of housing congestion in delinquency assumes however (a) the previous existence of delinquent patterns of conduct on which the adolescent boy or girl models him or herself; and (b) that there is no constructive organization of recreation facilities and possibilities in the neighborhood. In other words, this analysis presupposes an already "disorganized" neighborhood, and without these conditions it is not likely that congestion would lead to delinquency by this path, at any rate. Thus far no investigations of the causes of delinquency have been made within such a framework.

The type of disintegration of family unity which is characteristic of many families in the slum areas, with the split between the generations, probably has as much to do with having the children spend their time in the streets instead of in the home as any other factor. The life of the street, the schoolyard, and the gang offers many possibilities, and only within very narrow limits can the existence of these be attributed to congestion.

Congestion has also been assigned as a cause of criminal conduct in the sense that constant proximity, without privacy, among persons not fully assimilated to one another's values, might often lead to friction and violent outbursts. Such temperaments, however, are not in themselves the result of housing conditions. As long as the social order is conducive to such types of disorganization, housing itself will play only a very slight role in bringing about or preventing delinquency.

TABLE 78.—*Adequacy of household space in 6 largest cities of New Jersey; percentage distribution in homes of delinquents compared with total population* [1]

| Cities | Adequate | | Crowded | | Congested | |
|---|---|---|---|---|---|---|
| | Homes of delinquents | Total population | Homes of delinquents | Total population | Homes of delinquents | Total population |
| Newark | 39.8 | 79.7 | 40.4 | 19.0 | 19.7 | 1.3 |
| Trenton | 49.6 | 86.5 | 44.4 | 13.0 | 6.0 | .5 |
| Jersey City | 43.0 | 79.2 | 41.1 | 20.0 | 15.9 | .8 |
| Elizabeth | 37.7 | 82.5 | 48.2 | 16.7 | 14.1 | .8 |
| Camden | 51.0 | 87.0 | 41.7 | 12.7 | 7.2 | .4 |
| Paterson | 43.3 | 86.0 | 47.8 | 13.5 | 8.8 | .5 |

[1] Compiled from *The Relation Between Housing and Delinquency*, Federal Emergency Administration of Public Works, Housing Division, Washington, D. C., 1936, p. 72.

Another of the charges made against congested and substandard housing is that the frequent presence of lodgers or roomers within the family group tends to operate in a disruptive manner on the maintenance of family morale. There are at present no extensive studies which corroborate this thesis, but there does seem to be a probability that the continued presence of a stranger within the intimate circle of the family might cause cleavages by introducing values which are contrary to those of the dominant members of the family. But despite this probability, it should be insisted that the existence of the single person who lives with a strange family is a result only in part of housing conditions. If rooming houses, hotels, and other public lodging houses were more attractive and more convenient, the single men would not want to live with private families. A family, however, takes in roomers not because its housing conditions are poor, which they very well might be, but rather in order to supplement its income and to make it easier to pay the rent. This is a question of wages, employment, and standard of living, which find partial expression in housing conditions but not vice versa.

The slums are also accused of being the points of origin of radicalism, social unrest, and revolutionary attitudes. The meaning of this proposition is ambiguous and a preliminary clarification is necessary before it can be discussed further. If it is understood to mean that radical groups use the existence of slums as propaganda against the present social order, then there can be no doubt as to its correctness.[5] If, however, it means that persons living under slum conditions are most likely to become radical or revolutionary, then the answer must be an uncertain one because of the paucity of the existing data. General and uncontrolled observation indicates that it is not the occupants of the very worst slum dwellings who become radical; and even if that were the case, housing conditions would be only one of a large number of considerations which would lead a slum dweller to adopt a radical attitude to the existing order. Conditions of work, income, insecurity in ill health, and old age may provide sufficient grounds for resentment against the existing order, although, of course, squalid living conditions may also be a factor. Furthermore, such clear-cut material calculations are not the only grounds on which persons in the lower income group turn towards revolutionary methods of improving their lot. Finally, it should be added that if poor housing conditions do give rise to radicalism, the response is a conscious one; whereas in the role of poor housing in delinquency, the response, where it does exist, is most frequently a sort of unconscious and often indirect type of accommodation and for that reason is qualitatively different.

In short, almost every social-pathological phenomenon attributed to housing conditions may be shown to be in the main a concomitant, along with housing, of other more fundamental factors. Nonetheless, it is not to be denied that given certain conditions, housing situations may exercise an autonomous force of their own.

> If we accept the slums as the major geographic source of crime, it is still possible that other factors of the slum environment play a larger role than housing. Inadequate supervision of child activities—whether due to broken homes, wage earning by both parents, or the necessity of having child-play activities proceed in the unfavorable environment of the city streets—is of much greater significance than housing. Such slum conditions, however, might be eliminated by well-conceived slum rebuilding projects which would provide playgrounds in the center of the block, play supervision, nurseries for young children, and a variety of other features. Slum rebuilding would therefore mean reduction of crime.[6]

The studies which we cited above which portray the spatial coincidence of high delinquency rates and poor housing conditions are not sufficiently refined to show the autonomous operation of housing as a specially causative factor. More specifically oriented, statistically controlled studies are necessary.[7]

The views represented by popular exponents of housing reform, i. e., those who hold poor housing responsible for all social evils, as well as the views of those who reject *in toto* the possibility of housing as a causative factor under any conditions are equally one-sided and intellectually unproductive. The more moderate theory seems to be more in accord with general sociological considerations and to be more hospitable to the type of research which will determine more exactly than at present the extent and the conditions under which housing exerts a significant influence on conduct.

[5] cf., e. g. *Housing Under Capitalism*, by Sidney Hill, International Pamphlets (New York, 1935).

[6] Ford, *op. cit.*, p. 419.

[7] The results of the New Jersey and the District of Columbia studies (*supra*) could have been improved if neighborhood and other social factors had been held constant in seeking the housing differentials between delinquents and non delinquents

# PART III
# URBAN LAND POLICIES*

## Contents


| | Page |
|---|---|
| **Foreword** | 213 |
| **Summary of Findings and Recommendations** | 214 |
| **Section 1.—Land Policies and Land Uses Which Affect Rational Urban Development** | |
| Wildcat Speculation and Frenzied City Growth | 217 |
| Speculation in Outlying Areas | 217 |
| Premature Subdivisions | 217 |
| Poorly Planned Subdivisions | 219 |
| Speculation in Improved Lands | 221 |
| Under-Use and Over-Use of Land | 221 |
| Peripheral Growth and Urban Blight | 222 |
| Lack of Neighborhood Planning | 222 |
| Difficulty of Assembly of Large Urban Land Areas | 223 |
| Adequate Use of Land in Private and Public Ownership | 224 |
| **Section 2.—Review of Prevailing Urban and Suburban Land Policies** | |
| Municipal Ownership of Land | 225 |
| Extent of Public Ownership of Land in American Cities | 225 |
| Municipal Land Ownership in Europe | 228 |
| Methods of Acquiring and Disposing of Public Land: With Analysis of Present Constitutional and Statutory Provisions, and Suggestions for Needed Improvements | 229 |
| Purchase | 229 |
| Appraisal | 230 |
| Condemnation | 231 |
| What Constitutes a Public Use | 233 |
| Purchase and Condemnation Compared | 234 |
| Land Assembly Technique | 235 |
| Excess Condemnation | 235 |
| Acquisition by Gift and Devise | 239 |
| Utilization of Municipal Land | 239 |
| Sale, Lease or Other Disposal of Public Land | 241 |
| Permanent Municipal Ownership of Tax Foreclosed Properties | 241 |
| Legal and Economic Aspects of Land Titles | 243 |
| Title Examination and Title Insurance | 243 |
| The Torrens System | 244 |
| Mortgage Foreclosure | 247 |
| Revision of Current Practices in Selling Tax Delinquent Property | 250 |
| Other Legal and Economic Aspects of Land Titles | 255 |
| Effect of Long-Term Leaseholds | 255 |
| **Section 3.—City Planning, Zoning, and Subdivision Control as Factors in Urban Land Policies** | |
| How the Street System Can be Used to Influence Future Land Uses | 258 |
| Building Lines and Official Maps as Aids in Street Acquisition | 260 |
| Relation of Land Zoned for Various Uses to Present and Probable Future Needs | 260 |
| Real Estate Subdivisions | 262 |
| Waste of Resources, Public and Private, Arising from Excessive Speculative Laying Out of Building Lots | 262 |
| The Conservative Viewpoint as to Subdivion Control | 264 |
| The Liberal Viewpoint as to Subdivision Control | 266 |
| Curbing the Subdivision Mania | 266 |
| State Control of Subdividers | 268 |
| Measures for Effecting the Reorganization and Replatting of Defective Subdivisions | 268 |
| Effect of Intensive Building Development on Land Values | 269 |
| Effect on Land Values in the Neighborhood | 269 |
| Effect on Land Value in the City as a Whole | 270 |
| Parking Lots | 271 |
| Building, Sanitary and Other Codes | 271 |
| Effect of Private Restrictions on Property Uses | 272 |
| **Section 4.—Neighborhood Planning and the Rehabilitation of Blighted Areas and Slums** | |
| The Neighborhood Unit Proposal | 274 |
| Examples of Planned Neighborhoods | 275 |
| Organization for Neighborhood Planning | 276 |
| Group Action Proposals | 276 |
| Proposal of the New York Building Congress | 277 |
| Proposal of the National Association of Real Estate Boards | 279 |
| Lex Adickes | 279 |
| **Section 5.—Taxation as an Aid or Handicap to Rational Urban Land Policies** | |
| Significance of the Property Tax | 282 |
| Devolution of the General Property Tax | 282 |
| Classified Property Tax | 283 |
| Abolition of State Property Tax | 284 |
| Exemptions of Specified Forms of Personalty | 285 |
| Untaxing of All Personalty | 285 |
| Untaxing of Improvements | 285 |
| Exemptions by Ownership and Use | 286 |
| Tax Exemption for Housing Projects | 288 |
| Tax Exemptions to Industries | 289 |
| Extent of Property Tax Exemption | 290 |
| Taxation of Private Properties Used for Public Recreation | 290 |
| Real Estate Assessment | 291 |
| Ratio of Assessed to Actual Value | 291 |
| Findings by States | 291 |
| Classification of Property | 293 |
| Land and Improvement Statistics | 293 |
| Exemption Statistics | 295 |
| Assessment Administration | 295 |
| Personnel and Size of Assessment Units | 295 |
| The Unit Rule | 296 |
| Relation of Zoning to Assessments | 297 |
| State Control Over Local Assessments | 298 |
| Special Assessments | 299 |


*Prepared by Harold S. Buttenheim.

| | Page |
|---|---|
| Real Property Tax Limits | 301 |
| Experience with Tax Limits | 301 |
| Sales Tax Provisions in Tax-Limit States | 303 |
| Land Value Taxation | 304 |
| Differing Incidence of Land and Improvement Taxes | 304 |
| Capital Value vs. Income Basis for Real Estate Taxes | 306 |
| The Graded Tax | 306 |
| Land Value Taxation in the United States and Abroad | 307 |
| An Increment Tax on Land Values | 307 |
| American and Foreign Methods of Taxing Real Estate | 309 |
| Real Estate Taxation on Income or Annual Use Value Basis | 310 |
| **Section 6.—Desirability, Pro and Con, of Increased Public Ownership of Urban Land** | |
| Public Ownership of Land for Housing Purposes | 312 |
| Municipal Land Ownership and Housing in Europe | 312 |
| Advantages of Public Land Ownership for Housing | 313 |
| Greenbelts and Green Wedges | 317 |
| European Experience and Opinion | 318 |
| Land for Parks, Playgrounds, and Airports | 321 |
| Managing a City's Real Estate | 321 |
| Municipal Lease of Private Land | 322 |
| Municipal Land Acquisition | 323 |
| Effects of Municipal Land Acquisition on the Real Estate Market | 325 |
| Municipal Ownership as a Method of Putting Vacant Land to Use | 325 |
| Financing Land Purchases | 325 |
| To Forestall Land-Socialization | 326 |
| **Appendix A.—Bringing Zoning Up to Date, by Herbert S. Swan** | 329 |
| **Appendix B.—Amount of Land Actually Used and Zoned for Various Purposes in Several American Cities** | 350 |
| **Appendix C.—Bulk and Density Restrictions in Large City Zoning Ordinances** | 353 |
| **Appendix D.—Amount and Distribution of Public Land in Selected Urban Areas in the United States** | 355 |
| **Appendix E.—How a Graded Real Estate Tax Would Affect Various Groups of Property Owners** | 360 |

## ACKNOWLEDGMENTS

This study was conducted under the direction of Mr. Harold S. Buttenheim with the following collaborators: Wayne D. Heydecker, Ira S. Robbins, Herbert S. Swan, and Mabel L. Walker; and the following assistants: George A. Blair, Oscar Fisher, William H. Ludlow, and Marion E. Lewis.

# PART THREE
# FOREWORD

Mankind will continue to live and to work and to play in varying degrees of proximity. When their gregarious needs or desires bring 2,500 or more persons together in an incorporated municipality (or 10,000 or more persons in an unincorporated political unit with a population density of 1,000 or more per square mile), there has been created an urban community as that term is defined by the United States Bureau of the Census. It is in this general sense that the word "urban" is used in the present report.

To enhance the satisfactions and decrease the discomforts—physical, social, economic, and esthetic—of urban life is the purpose of "rational urban development," as that term is employed in the following pages. The philosophical question of whether urban development ought to be generally discouraged in favor of a predominantly rural economy is not discussed. The continuance of urban life for a substantial percentage of the population—and, indeed, the desirability of such continuance—is assumed as one of the premises of the present report.

The term "land" is defined in its broad sense of the surface of the earth, both ground and water.

Assuming, then, that urban life is to be the fate or the fortune of 40 or 60 or 80 percent of the American people in any predictable period of years and assuming the power of mankind to control in large measure its own destiny, the adoption of land policies for rational urban development becomes a challenge of major importance.

In what size of city can the fundamental functions of urban life be best performed? The authors of this study may have their personal opinions on this subject, but they are not germane to the present discussion. It is here assumed that urban communities of all sizes from 2,500 to several million inhabitants will continue to exist; that some or all of the major functions of urban life can be performed with success in every size of urban unit; and that this report will be worth while to the extent that it offers to persons concerned with the public welfare, in all urban areas, practical suggestions for land policies whereby that welfare may most effectively be enhanced.

It is recognized, of course, that urban communities may grow or decay under the pressure of forces beyond the control of their inhabitants. Our National Capital, at one extreme, and deserted lumbering and mining towns at the other extreme, are cases in point. The invention or abandonment of a manufacturing process by a major industry, the promulgation of a new freight rate by the Interstate Commerce Commission, or the substantial cheapening of power costs may have greater influence on a city's destiny than any action of its planning board or governing body.

Profound changes in town and country relationships and in urban land uses may result from current experiments and trends in agriculture and transportation. We are told, for example, that recent experiments in dirtless farming, producing huge yields of vegetables in water tanks fed by fertilizing chemicals, suggest the possibility of raising in "skyscraper farms" within city limits many of the food requirements of urban dwellers. We are told that the recently developed device for dwelling on wheels, the automobile trailer, will increasingly be used for vacation touring by persons of moderate means and by those of greater leisure who may wish to live North in the summer and South in the winter; by college students, as a substitute for dormitory or boarding-house life; and even by hordes of migratory workers, who will thus be enabled to move with the seasons or with fluctuations in employment opportunities without losing their homes. With possibilities such as these, the land-planner must concern himself as they emerge from phantasy to fact; but his major concern must be, both now and then, with the more fundamental and persistent problems of land ownership, taxation, and control. Of such problems many are all too visible now; and, as someone has said, it is the planner's duty to look ahead, but not necessarily to strain his eyes.

For many municipalities, the contingency exists that political or economic forces, or a physical or social earthquake, may bring life or death to the city as an urban entity. Such faith or fear is no more justification for a fatalistic attitude toward urban land policies than is an individual's faith in or fear of the future any justification for an aimless and wasted life. In short, the fact that uncontrollable forces may wreck a city is no excuse for neglect of the controllable forces which may save the city.

# PART III
# SUMMARY OF FINDINGS AND RECOMMENDATIONS

### Urban Land Policies in the National Economy

Since land is both literally and figuratively the foundation of human life and welfare, the formulation of land policies for rational urban development becomes an urgent concern. As the indivdual's service to society is dependent, as a rule, on the conservation of his own physical, mental, and moral vigor, so the urban community may serve the nation well by the adoption of such land policies as will best conserve the physical, mental, and moral health of its present and future inhabitants. From such competition among their municipalities, the states and the nation have nothing to fear and for much to hope.

### Significant Facts

The typical American city today presents a picture of highly irrational and wasteful land use, misuse, and nonuse. In the central part of the city are found areas of former commercial and industrial activity declining or lying idle, residence areas of extreme dilapidation with their congested and insanitary living conditions, and prosperous commercial areas clogged by the concentration of activity in the small number of squares considered the most valuable. In the other areas are found great stretches of subdivided land serviced or partially serviced for tenancy, and in the intervening areas too often an unplanned mixture of residential and business uses and vacant lots.

Urban congestion, is, in fact, rather an accepted tradition than an actual need, for a planned distribution of the population of any city would in a large measure eliminate the existing distress. The cost of irrational use of the city's land areas is tremendous, and it is difficult to be sure whether the congestion or the nonuse is the more expensive. To the economic cost in terms of health and social services and of traffic congestion and tax delinquencies must be added the intangible human costs of the blighted areas and slums.

### Underlying Forces and Trends

In recent years, notably since 1909, when the first National Conference on City Planning met, public attention has been directed more and more to these problems of urban land use. Though they have been commonly ascribed to the unbridled exploitation of land by private owners, candid analysis must place the major responsibility on our lack of urban land policies and on the consequent failure of our public bodies to afford to private owners and developers adequate protection and opportunities for wise and profitable land uses.

The weaknesses in public policy will be here discussed in terms of the shortcomings in application of the various instruments of control: Planning, zoning, assessment, taxation, eminent domain, and land transfer procedures.

Bitter experience is demonstrating that the great American game, land gambling, instead of being an innocent business venture or a speculation of concern only to private individuals who play the game, is too often a public tragedy, with most of the losses underwritten by the taxpaying public. In many cities and suburban areas, the widespread and largely uncontrolled laying out of premature and poorly planned subdivisions is a boom-time phenomenon which already shows signs of recurrence. How best to regulate land speculation, with justice to legitimate and socially useful business interests, is one of the most important and difficult of civic problems.

To the absence of sound, long-term city planning and of enactment or enforcement of adequate zoning ordinances and building codes must be ascribed much of the blame for the deplorable housing conditions existing throughout the country and for the speed with which new housing accommodations deteriorate.

New methods of transportation have made unprecedented urban decentralization possible. Our outmoded street systems and the interior planning of our cities have not, however, been changed to conform with the new mobility.

Another major factor in urban blight has been the fact that, in the face of the trend in recent years towards vertical growth of office and loft building and apartment-house developments, wishful anticipation of the spreading out of such developments over impossibly wide areas has kept prices of building sites at a level too high to permit their proper use for housing purposes.

Real-estate taxation is in confusion, both in theory and practice. Disintegration of the general property tax, resulting in differential rates of taxation and increasing exemptions of property both by type and use; inequitable assessment methods; confusion and inefficiency of collection practices; widespread use of special assessments; and the spread of rigid tax limits are probably the most outstanding practices or trends

in taxation which, for good or ill, directly affect urban land policies and uses.

In the acquisition of additional land by municipalities, the chief present handicaps are: Narrow interpretations of what constitutes a public purpose, opposition to increased activities and expenditures by governmental agencies, and the tradition that municipalities should not act as real-estate investors or speculators and hence must not acquire land until it is actually needed. As usual, even though these attitudes are being slowly liberalized, statutory provisions and procedures thereunder have failed to keep pace with this liberalization.

The eminent-domain statutes in practically every State are unsatisfactory. The procedures are usually highly technical, expensive, long-drawn-out, and often result in excessive awards. There is also no well-established practice or procedure in connection with municipal land purchases. Only a few cities have real-estate offices with adequate powers and personnel, and efficient procedures. Acquisition by purchase by municipalities is often hindered by procedural restrictions in the charters. The exercise of the too-seldom-used power of excess condemnation for public purposes is permitted by amendments to the constitutions of only nine States. There is wide variation in the provisions of such amendments with respect to the purposes for which the procedure is applicable, the amount of land that may be taken, the requirements for executory legislation, and the financing of the acquisition.

Land values and the facility with which land may be transferred and utilized are affected by the laws and practices relating to title registration, title insurance, mortgage foreclosure and moratoria thereon, and the sale of tax-delinquent property. Though the trend toward adoption of the Torrens system is slowly making headway in a few States, the expensive device of title insurance prevails in many more. Little progress has been made in simplifying and unifying the legal procedures relating to mortgage foreclosures and sales of tax-delinquent property.

### Problems

From the standpoint of the public at large, the central problem appears to be that of developing a concept of urban land as fundamentally different from other commodities and as having vital importance to community and national welfare out of all proportion to its dollars-and-cents valuation. Such an attitude especially needs to be directed toward the universal practices of land gambling. Without such an attitude, the implementing of efforts at control through such instruments as are mentioned below will be impossible.

The urban community is interested in land: first, as to the control of its private use; second, as to its public use; and third, as to its value as a source of revenue through taxation. In the first of these, the problems are those of developing power to enforce more effective planning, zoning, and building construction laws; in the second, of getting greater freedom from the courts for municipal land purchases and leases, of developing methods for land assembly, especially for slum clearance and housing, and of perfecting legal techniques for title clearance, mortgage foreclosure, and the handling of tax-delinquent property; in the third, of rationalizing the whole local taxation system, including assessments, levy, and collection, especially in the direction of obtaining a greater share of tax revenue from the community-created values in land itself.

### Suggestions and Recommendations

1. We concur in the recommendations adopted in 1935 by the American City Planning Institute, as formulated by its Committee on Research in Urban Land Policies, that every municipality, county, and State should have an official planning board; that all such boards should be competently manned and adequately financed; and that all urban territory should have both an official plan and a zoning ordinance to control its future development.

2. More effective limitation of the height and bulk of buildings is needed and better regulations affecting setbacks, towers, and the size of courts and yards. In the more open sections of our municipalities, and particularly in suburban and rural areas, legal sanction is needed for zoning classifications for agriculture, recreation, flood control, forestry, watershed purposes, and the like. Most zoning plans should be restudied and revised so that the area of land allotted for various uses corresponds more closely to the area likely to be so used.

3. The building and maintaining of well-planned neighborhood units is an essential of rational urban development. The basis for such a unit and the space it should occupy are fixed by the best working of its four major functions: Schools, playgrounds, retail shops, and residential environment. The neighborhood unit should be bounded by major traffic routes or other physical barriers, without any main traffic passing through it.

4. As regards the control of both the quality and quantity of subdivisions, among the most promising methods appears to be legislation requiring the developer, at its own expense, to install necessary public improvements such as sewers, water mains, streets, and sidewalks as conditions precedent to the approval of the plat, and to set aside an appropriate percentage of the land for parks, playgrounds, schools, and other public purposes. We endorse legislation to prohibit the transfer of land by metes and bounds description, at least when under a stipulated minimum size (10 or 5 acres). We also recommend refusal of building permits on unrecorded sites or those located on streets not approved by the planning agency.

5. Wherever a county or regional planning agency exists, it is believed better than such agency exercise control of the planning of all unincorporated areas under its jurisdiction than that the municipality seek the power to pass upon subdivisions beyond its own boundaries.

6. We recommend that efforts for the rehabilitation of slums and blighted areas be turned from debate into action, and that experiments along the following lines be undertaken promptly: (a) Action by official agencies such as public-slum reclamation and housing authorities;[1] (b) the use of incidental or excess condemnation as a tool which will facilitate rehabilitation; and (c) group action initiated and executed primarily by the owners and others interested in specific areas.

7. The gradual reduction of the tax rate on improvements, accompanied by a corresponding increase in the rate of the tax on land values, would tend to reduce speculation in idle land and to make large-scale, low-rent housing developments more practicable. With or without such change in the base of the real-estate tax, it is believed that a land-value increment tax would be desirable, in order that the community might share more fully and more equitably in the values resulting from public expenditures and community growth. Such an increment tax might be levied either periodically or at the time of transfer and might develop into an effective substitute for the present practice of levying special assessments. Taxpaying ability, other than that represented by land ownership, can be reached more equitably by means of a net income tax than through a general property tax.

8. Foreclosure methods should obviate the costly and cumbersome features which now make for delay and useless expense; avoid possible uncertainty in the title; afford the mortgagee an efficient remedy against the borrower and the security; and satisfy the mortgagor's need for reasonable notice of sale so that he may have full and fair opportunity to protect his equity in the property, and escape, if possible, an unwarranted or excessive deficiency judgment.

9. The provisions of city charters relating to the acquisition, use, and disposition of land by municipalities should be made to accord with the broad language contained in the Model City Charter advocated by the National Municipal League.

10. Studies should be made of municipal land acquisition procedures in all the States, followed by the adoption of charter provisions and administrative proceedings pursuant thereto, varying with the size, needs, and locations of municipalities, which will enable cities to purchase land on a businesslike basis efficiently, quickly, and at fair prices.

11. State constitutions should be amended to permit the exercise of excess or incidental condemnation procedure, and existing amendments which now unduly limit this useful procedure should be revised.

12. Land for housing, green belts or wedges, or for other municipal purposes should be acquired gradually over a long period. A municipal real-estate department, such as is found in a few cities, could play a significant role in this process.

13. Ways and means should be devised for bringing into at least temporary public use all urban land which the community could use to advantage and for which private initiative cannot promptly find desirable uses. Under such public ownership or control, our cities would speedily be supplied, more adequately than ever before, with neighborhood parks and playgrounds, public golf courses, allotment gardens, parking spaces, artificial lakes, town forests, and other opportunities for recreation, culture, and esthetic enjoyment.

14. Studies should be made of the following subjects, among others:

(*a*) Effects on land values and land prices of: (1) Various types of public improvements, (2) public control of land uses through zoning ordinances and otherwise, (3) increases and decreases in city population, (4) centralization and decentralization of business and apartment house districts, and (5) increased efficiency in industry and agriculture, i. e., the ability to produce greater wealth per unit of land.

(*b*) Long-term leaseholds in American cities.

(*c*) The interrelationship of different lending policies on the use of land.

(*d*) Construction problems, such as the place of natural illumination in different types of buildings; scientific housing standards for regions having different climatic conditions; and the possible effects of recent developments in building materials and methods, including prefabricated, rebuildable, and mobile houses.

(*e*) The desirability and possible effects of obsolescence insurance, or "property-life insurance," as a device for minimizing future urban blight.

(*f*) The blighting effects of major traffic routes, bridge approaches, elevated highways, express highways in residential districts, etc., and how such effects may be overcome.

(*g*) Experience throughout the world with various methods of financing public improvements, in whole or in part, by the added site values or ground rents which such improvements create.

[1] Since the writing of this report, the United States Housing Authority has been set up by Act of Congress, and more than 250 local housing authorities have been organized. On its second anniversary (November 1, 1939) the U. S. H. A. reported that loans totalling $521,097,000, representing 90 percent of the $579,125,000 estimated cost of 296 low-rent housing projects, had been approved for 135 communities. Information as to administrative experience in connection with U. S. H. A. projects is obtainable from the National Association of Housing Officials, 1313 East 60th Street, Chicago, Illinois.

# PART III—SECTION 1
# LAND POLICIES AND LAND USES WHICH AFFECT RATIONAL URBAN DEVELOPMENT

### Wildcat Speculation and Frenzied City Growth

Since the days of William Penn, who gave a bonus of a city block in Philadelphia to every purchaser of 1,000 acres of farm land outside the city, land gambling has been a major factor in the development and exploitation of many American cities. Speculative land booms, however, are seldom generated by the indigenous inhabitants and local capital of a city; to foment a good-sized boom requires the invasion of both men and money from other places.

If there is no such influx of cash and customers into a community, land prices generally follow a more normal, steady course, rising or falling with reasonable relation to the increase or decrease in the numbers and earning power of the population. The invasion of new thousands seeking permanent homes or of other thousands seeking speculative profits changes all this. Land prices then begin to anticipate the effect of continued rapid growth; the speculative pendulum swings entirely too far; all sight is lost of land values based on nonspeculative demand and reasonable use. The sky is the limit; until, at last, the props are knocked from under the whole dizzy structure of fictitious prices and the community staggers amidst the wreckage of debt, unpaid taxes, defaults, and bankruptcies following the collapse. Such have been the too common occurrences which have made real-estate booms among the most sordid chapters in urban history. Fortunate, indeed, is the community that has escaped.

### Speculation in Outlying Areas

If land were allowed to ripen rationally and were taxed equitably, there would be a steady or orderly accretion to the area of a city. It would grow, insofar as natural barriers did not prevent, with few gaps from the center to the rim. Such growth as occurred would be mainly circumferential, distributed in successive rings or belts on the periphery of the city and bearing a logical relationship to the city's core.

This natural process is upset by wildcat speculation. Land brought into the market bears little relationship to the normal development of the community. To the speculative developer, a quick profit is far more urgent than a big profit; for if too long deferred, even an apparently big profit is actually a loss, because of accumulated interest and taxes. If the speculator can buy land at or near its basic agricultural value and then through a high-pressure sales campaign market his lots to prospective home builders, he may be able to "jump" 10, 20, 30, or more years in the natural ripening of the land.

### Premature Subdivisions

No one who has travelled to any extent by motorcar or railroad through the United States can fail to be impressed with the widespread occurrence of premature subdivisions. In 1915 and 1916, and to an increasing extent during the 1920's, for miles outside of Detroit and even out as far as Pontiac and Flint, there were to be found row upon row of alleged building lots on street after street that had no other reason for being than that they intersected some main line highway or interurban electric route connecting with the center of Detroit. These lots were in many instances only staked out on the land. Street improvements, sidewalks, and gutters were usually missing or were confined to concrete gutters and curbs with a strip of cinders between them to represent a street. As far as the eye could see, the white painted posts bearing street names stretched out in all directions, a band sometimes a mile or more in width along the traffic artery.

The experience of Detroit has by no means been unique. Of Cleveland's 375,000 lots, 175,000 were vacant in 1929 "and their absorption," says the Department of Commerce, "will be measured in generations rather than in years." Chicago was said to have enough platted suburban land 5 years ago to house 18,000,000 people. Seventy-five percent of the total platted area of Burbank, Calif., and 53 percent of the platted land through Los Angeles County have been reported as vacant. Fifty percent of the land in Portland, Maine, stands empty, 66.6 percent of the lot area of Duluth and 30 percent of the lot area of El Paso are in the same state.[1] Outside of St. Louis, there are over 100,000 vacant lots.[2]

In the twenties in Florida, the story was repeated with added embellishments. Because sand was so plentiful and the gambling fever so high, the confident Florida speculators formed new local governments or persuaded the existing agencies to incur debts to build sidewalks, curbs, and gutters, to install good gravel or even concrete roadways, to erect ornamental street lighting standards, and thus to prepare for a vast pop-

[1] *Housing America*, by the Editors of *Fortune*.

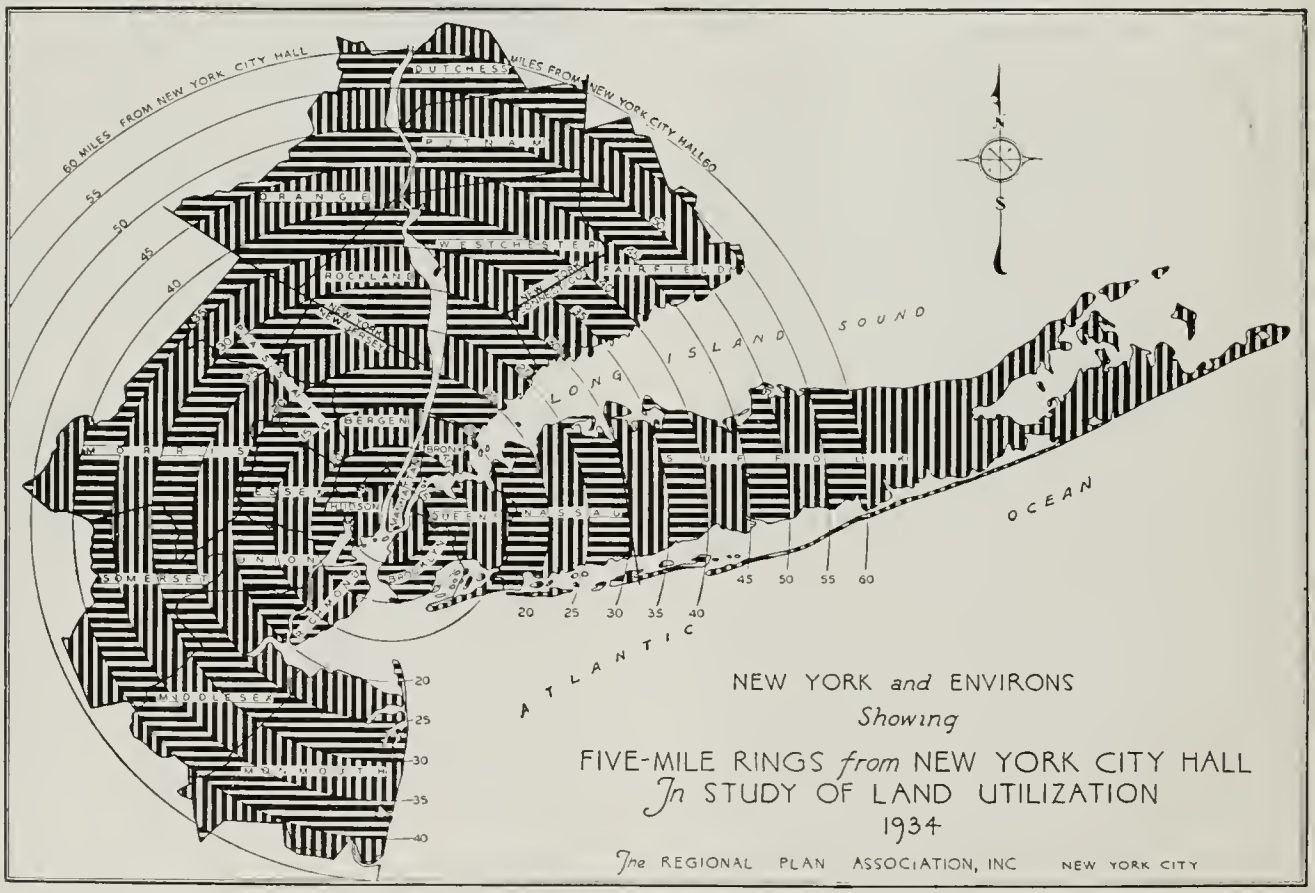
[2] *Regional Planning, Part II, St. Louis Region*, National Resources Committee, 1936, page 22.

ulation that never came. Ten years later, the visitor to these needless subdivisions found these streets weed-grown and dreary. Broken lights or overturned standards lay hidden in the brush. Weeds grew waist high or water stood ankle deep on many a lot that had been bandied about in the local real estate offices for exorbitant prices. It has been estimated that the total land subdivided during the Florida boom was sufficient to house the population of the whole United States.

In the great metropolitan area about the port of New York, similar premature subdivisions tell the same story. In Bergen County, N. J., a boom developed as a result of the announcement of plans for the George Washington Bridge. For miles in all directions from the Jersey bridgehead, feverish speculation took place. Farms were cut up into paper streets, lots were sold by high pressure mail campaigns and at public auction, and the whole countryside was platted. One may still see today row upon row of vacant lots on nonexistent streets that for a long time to come will clutter up the tax books with arrearages.

On Long Island, there are enough lots staked off to make suburbanites of the inhabitants of the five boroughs of New York. The town of Islip bears eloquent testimony to the folly of such practices. Although there were in 1926 some 20,000 lots hanging in the market in such a forlorn condition that their owners had ceased paying taxes upon them, some 9,000 new lots were platted in the course of 18 months. As a result, the real-estate market was trying to move about four times as many lots as there were then families in the town. In spite of this, in the 15 months ending in March 1927, some fifty estates were thrown upon the market in this general area for future subdivision, notwithstanding that large tracts of land nearer the populated areas or interspersed between them were already subdivided, largely served by paved streets, sewers, and water mains, and still very sparsely occupied. In nineteen developments in this section of Long Island by July 1926, 40,587 out of 86,349 lots had become county lands by reason of unpaid taxes, but still the process of throwing on the market new premature subdivisions went on.[3]

[3] *Regional Survey of New York and Its Environs.* Volume II, pages 170–3.




From Lawrence M. Orton in *The American City* for June 1934

FIGURE 41.—This map and the two charts on the following page are based on an analysis by Harold M. Lewis, engineer of the Regional Plan Association of New York City, showing that of 5,528 square miles in the region mapped, while only percent is now devoted to close residential use, an additional 14 percent, or 754 square miles, is available and suitable for such use, but that less than a third of this land is likely ever to be required for residence.

Thus even in the densely populated New York region, if the optimistic estimata of a total population of 16,000,000 should ultimately be reached, proper planning and protection could provide ample room for agriculture, forestry, golf and country clubs, private estates, airports, institutions and other uses that require little if any building development.

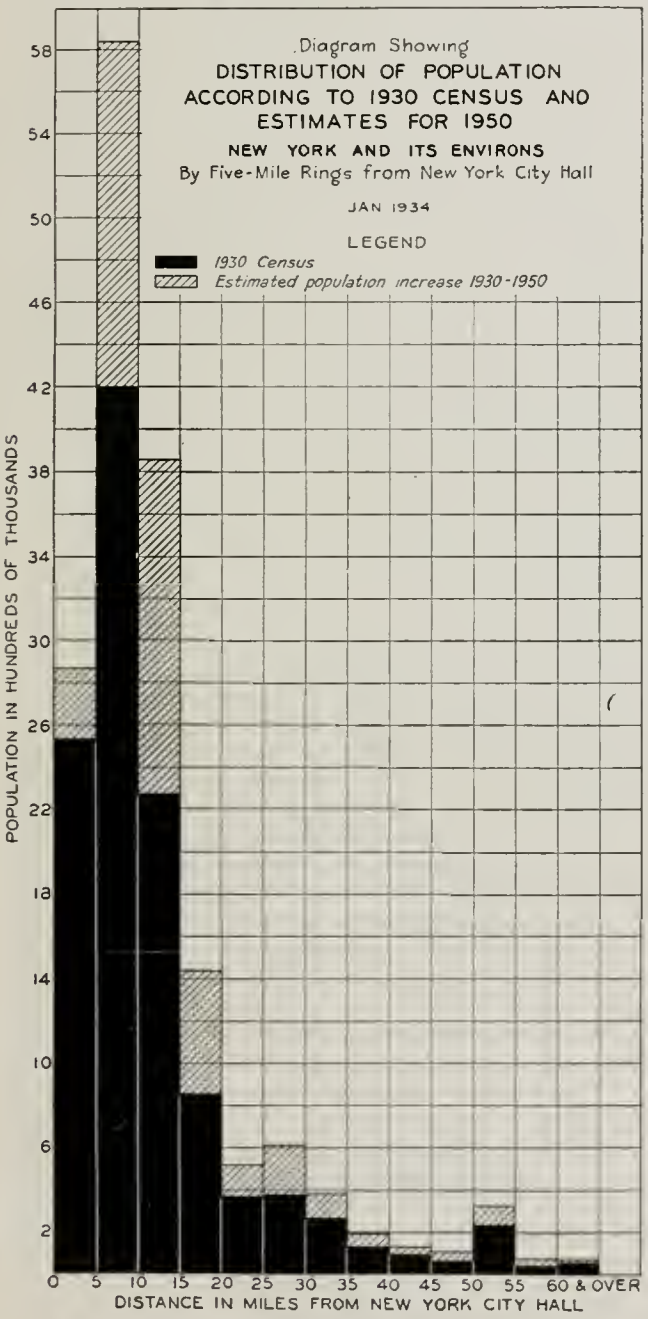
In New Jersey, east of the city of Paterson, the casual stroller who leaves the main highway to roam the untilled areas just to the north, will find among the underbrush the crumbling remains of concrete sidewalks thinly laid over once fertile farmland regardless of need or topography.[4] In Putnam County and in the northern part of Westchester County, N. Y., and along the New Jersey coast, thousands upon thousands of 20- and 25-foot lots have been sold by newspapers as part of their subscription campaigns. Ten and twenty years later the scattered dwellings or bungalows in these orphaned subdivisions look grimly out over their neighbors' weed-grown lots and clamor for street and maintenance services that cannot possibly be justified by the sparse population.

[4] *Ibid.*, Volume II, page 232.

These random illustrations are samples of the process that has taken place in practically every State in the Union. The fever of land speculation, of trying to sell at an artificially high price land that might at some remote future time have genuine value from the outward thrust of population, has permeated the fibre of every portion of the country. Few have paused to estimate the rate of possible future growth. It was assumed by the land peddler and his gullible purchasers that population increase was inevitable, that the quick way to riches was to buy land and await the onward march of development, to sell at a high price and buy again.

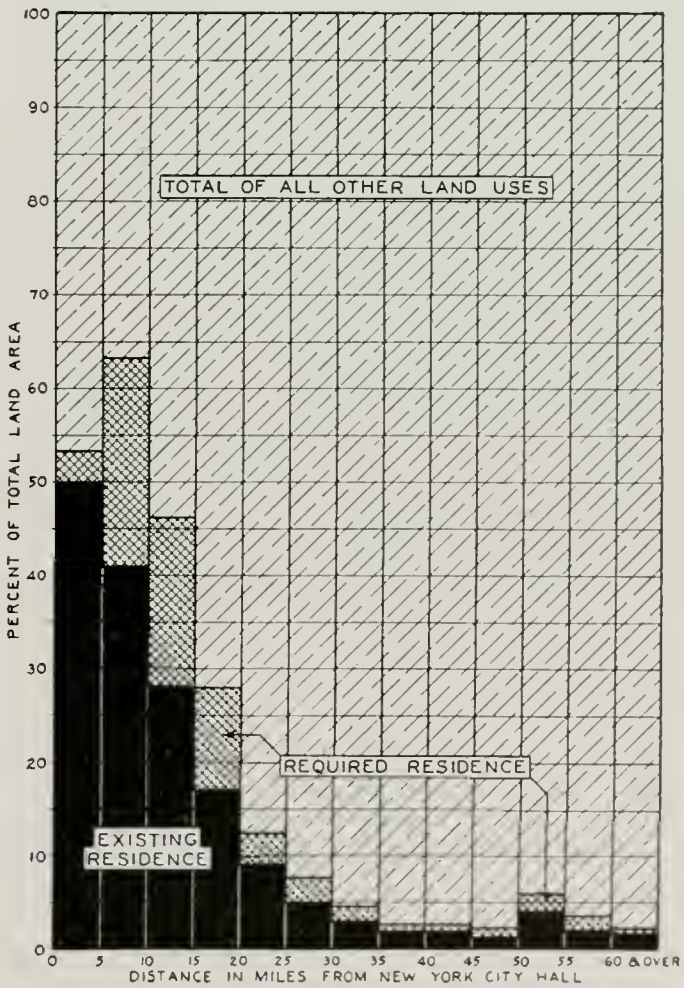
### Poorly Planned Subdivisions

In the 1932 report of the County Planning Commission of San Mateo County, Calif., Hugh R. Pomeroy wrote:




From Lawrence M. Orton in *The American City* for June 1934

FIGURE 42




From Lawrence M. Orton in *The American City* for June 1934

FIGURE 43

A subdivision is not merely a means of marketing land; it is far more, a process in community building. All the flurry of subdivision sales, all the financial considerations involved at the time, all the huge importance of immediate details—these are infinitesimal factors in the ultimate result, which is the addition of an integral part of the community, a part, which, once established in the comparative flash of time involved, is fixed as to its physical framework and permanently marked in its character. The fleeting economic effect of the act of subdividing gives way to the permanent, inexorable economic and social effect of the subdivision as a part of the form and life of the community.

The manner in which an area is subdivided affects intimately such considerations as the safety and mobility of pedestrian traffic, the drainage and sewerage of that and surrounding areas, the cost of carrying out public improvements, the density and sparsity of population, the social environment of the future inhabitants, and even the solvency of the prospective residents. Concerning the results of ignoring such considerations as these, Robert Whitten, in *Neighborhoods of Small Homes*, writes:[5]

The present ordinary street and block pattern for residential neighborhoods is wasteful in its street and utility requirements. From 15 to 40 percent of the money expended for street improvements can be saved by careful planning. From 15 to 30 percent of the gross land area now inefficiently used or wasted can be devoted to interior-block and neighborhood parks without any additional cost of land.

The saving in street length effected by careful planning will mean a considerable saving to the city for water mains and other improvements paid for directly in whole or in part from general funds, and will effect a very much greater annual saving in expenditures for the maintenance of streets and utilities. The cleaning, repairing, and reconstructing of 25 to 50 percent more paved street surface than is necessary with good planning, is a very important item in municipal finance.

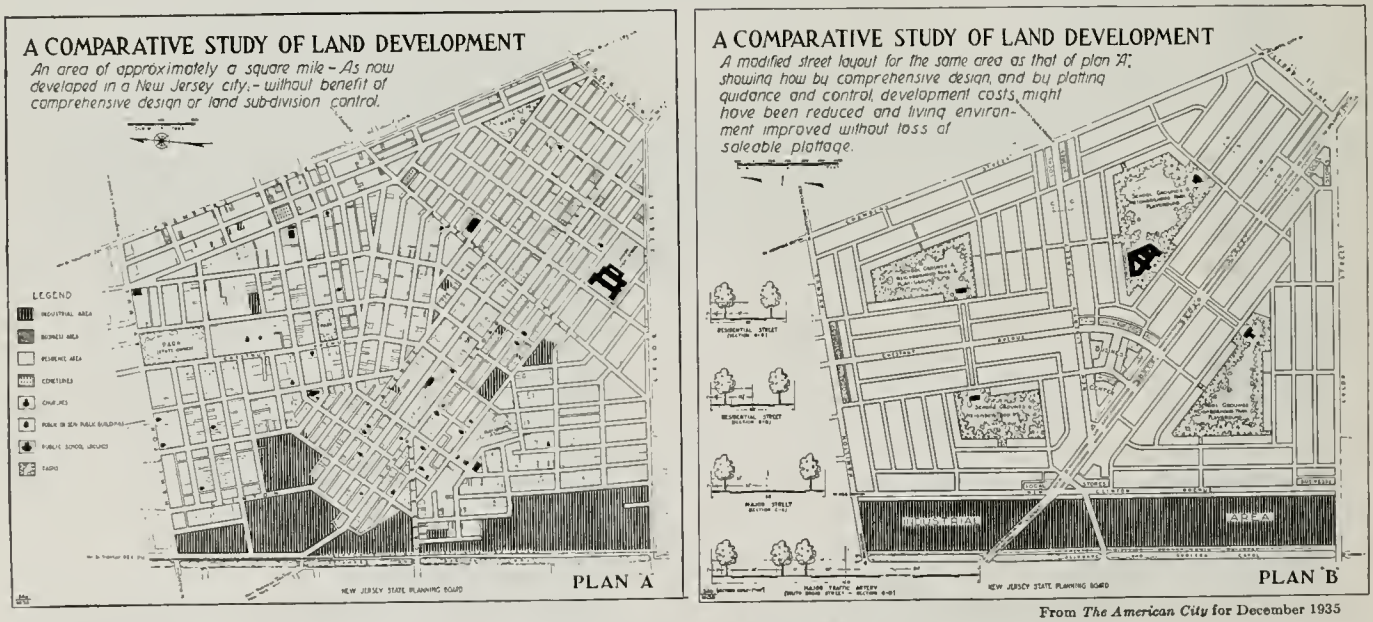
Many subdivisions, furthermore, have been laid out without any relation to adjacent subdivisions or to the comprehensive plan of the city. In this regard, Clarence Arthur Perry writes:[6]

Most of the existing urban neighborhoods are collections of several real-estate developments. Like rolled snowballs, they have grown by accretion. Usually each parcel of acreage was subdivided by a different individual, who followed the street pattern laid down by his forefathers and gave no thought to the location of the school or the need for local shops. . . . Playgrounds were not usually thought of at all until the section was completely built up and congestion compelled a consideration of the children's needs.

In some subdivisions, utter disregard of topography in the lay-out of the streets requires at a later date, where sewers are installed, costly booster pumps or tunneling operations to make effective drainage possible. Moreover, such monotonous gridiron developments in rolling country make for costly maintenance charges, excessive run-off, erosion, and wastage of storm waters. They entail expensive cuts and fills, are wasteful of land, and promote an arbitrary and needless congestion of population wherever population does develop. In some towns subject to hazardous winter conditions of snow and ice, streets with grades of 15 to 30 percent present a problem that frightens away any buyer with the ability to imagine the conditions of winter driving in such an area.

[5] *Harvard City Planning Studies*, III, p. 80.

[6] *Regional Survey of New York and Its Environs.* Vol. III, pp. 28–29.




From *The American City* for December 1935

FIGURE 44.—A square mile of urban land in New Jersey and how it might have been planned

This study, reported by the New Jersey State Planning Board in its First Annual Report of Progress (issued in November 1935) shows in Plan "A" a typical square mile in a New Jersey city and in Plan "B" the same area redesigned. If there had been foresight enough to adopt such a plan prior to the development of the area, there would have been a saving of more than 25 percent in the street mileage without appreciable loss of saleable area or frontage, and nearly 60 acres of park and playground areas would have been gained

Compared with well-planned subdivisions that take advantage of topography, minimize costs of cuts and fills, provide spaciousness with economy of land development, and otherwise preserve the amenities of the site, subdivisions of the gridiron type stand little chance in competition as a permanent development. The only excuse for their being is that the urban public understands a rectangular building plot or lot and believes that any other type of development is exclusively for the rich or well-to-do and therefore has but a limited market. In flat areas, the gridiron patterns, while deadly in its monotony, does not suffer as much from increased costs of construction and maintenance as it does when superimposed on rolling or rugged topography. However, even on these flatter areas its dreary lack of imagination handicaps it permanently in comparison with better planned areas.

Indeed, many areas owe their present blight to the manner in which they were originally platted. For example, inattention to the important matter of drainage in the original subdivision has cursed thousands of homes with wet cellars. A miserly allotment of building sites has forced the adoption of an unwholesome building plan, with the result that innumerable families live in dark and dingy rooms. Traffic congestion with all its inexorable toll in life, limb, and time is to a great extent traceable to the bad lay-out of streets in the original subdivisions. Nearly every urban problem is related to the ground plan of the city; subdivisions lay down the permanent basis of that plan and therefore permanently affect the future well-being of the community. Not to control the lay-out of the vacant tracts which will sometime become parts of the built-up area is abject surrender to chaos and anarchy in urban development.[7]

### Speculation in Improved Lands

Much wildcat speculation in land values has been at the edges of cities. Extensive as such speculation has been, that in lands previously subdivided has often been far greater. The technique of this speculation, however, is somewhat different from that in new lots. The game here, too, contemplates "rushing" the unearned increment by anticipating requirements of the urban community many years in advance, but it is played a little more subtly; it involves, because of the bigger stakes, the exploitation of a somewhat more sophisticated group in the social scale than does the wholesale marketing of the comparatively cheap suburban lot. This exploitation, implemented with shoddy construction and racketeering in a dozen different ways, almost always used such tools as the too high building, the building occupying most or all of the lot, the large multifamily house, the crowded tenement, and, in unzoned cities, the out-of-place store, filling station, or apartment in a single-family residence district.

Overdevelopment paid and paid handsomely, as long as the speculator did not overstay his market. Quick profits; a new development; another quick sale; repeat—this was the standard formula for the most lucrative practice. When entire districts stood in a fair way of being completely ruined, apologists for the order assuaged the few inarticulate protests by adducing the high land prices—the very product of their own speculation—as a justification, indeed, as the inevitable necessity, for their practice. They are not concerned with the fact that land speculation, because of the fixed quantity and immobile quality of land, creates evils of much longer duration than arise from speculation in the replaceable products of labor.

### Under-use and Over-use of Land

The culprits among land speculators, therefore, are not only those who use their property inadequately but also those who are so anxious for profits that they overdevelop their land and put it to an undesirable, if not an antisocial, use. The vacant land which should be built upon, as well as the under-improved land which should be more fully developed, are both in part the results of this overdevelopment. The 100-story office building, the 40-story hotel, the 20-story loft, and the 15-story apartment house concentrate so many of the activities of the community in a small area that they, for many years, hold in abeyance the use of other land which, except for this overdevelopment, is rotten ripe for improvement. Indeed, the continued financial success of such structures is often dependent on the unimprovement or under-improvement of neighboring properties. It is nothing short of catastrophic to the light and air of many of these buildings when an adjoining lot, heretofore either vacant or occupied by a small building, is "improved" in the same intensive manner as the lots already so developed. In deploring the vacant city lot in built-up sections, we should not overlook the fact that, in many instances, it is vacant through no fault of its owner; and we should put the chief blame on our lack of an adequate zoning ordinance. We might also admit that in a large number of cases such a vacant or under-improved lot performs a fuller measure of public service in admitting adequate light and air to a neighboring building that "sweats" the ground than by being improved with a similar building. Were it so improved, there would be two, possibly three or more, buildings with a vast number of dark and semidark rooms where today there is none.

[7] For later data see *Premature Subdivision and Its Consequences*, by Philip H. Cornick, published 1938 by the New York State Planning Council, Albany, N. Y.

### Peripheral Growth and Urban Blight

When the motor car and the motor highway made the confining of urban population within city boundaries increasingly difficult, the resulting centrifugal movement brought both benefit and blight to metropolitan regions.

In the outlying areas, better housing and more spacious surroundings have been provided for thousands of former city dwellers. To the older sections has come a gradual thinning of undesirable population densities. These benefits, however, have been accompanied, almost invariably, by a disintegration in the older residential areas of the city and by resulting economic and social costs of serious and increasing magnitude.

In St. Louis, for instance, the population of the older parts of the city along the river decreased by over 50,000 between 1910 and 1930. The proportion of total city area losing population increased from 13 percent for 1910–20 to 26 percent for 1920–30. In the older sections of the city, many buildings have been torn down, and vacancies stand at 22 percent for those buildings still standing. An incidental benefit has been the virtual disappearance of densities in excess of 80 persons per gross acre; but the dilapidation of the remaining buildings and the blight of the neighborhood are such that one-third of the people now living in those buildings were reported as wishing to move out when circumstances permit.[8]

The spreading paralysis of blight is often the direct result of misdirected effort in developing a city. Instead of modernizing old buildings, keeping them in good repair, and, when too obsolete for this treatment, supplanting them with well-designed structures comporting with the character and needs of the district, builders have neglected the central districts in favor of the suburbs, thus allowing conditions in the heart of the city to become progressively worse. This situation has been intensified by the hope of increased land values for other uses, because of which many property owners refrain from repairing or modernizing existing buildings. Moreover, because of the greater ease of acquiring land in outlying sections as against downtown sections, such areas have often been unduly favored with new schoolhouses and new parks and playgrounds. Failure of the city administration to bring about the provision of parking spaces for automobiles off the public streets has also been accompanied by incalculable harm to the residential character of neighborhoods bordering upon the downtown business district. That the best elements of the population should, as a consequence, desert these districts is not at all surprising. The results of this neglect are quite sobering—falling values, wiped-out equities, foreclosed mortgages, and decadent neighborhoods with a steady deterioration in both their physical and moral atmospheres.

Rapid development of the periphery and accompanying urban blight in older sections make for a twofold cost to the city—the cost of maintaining decaying areas unable to bear their appropriate share of the tax burden, and the cost of providing new facilities required by people to escape from decaying areas. The syphoning out of population often leaves behind unused schools, libraries, and other public utilities that must be furnished at great cost to the new suburbs. Witness the fact that New York City has more school seats than children, but the seats are not properly distributed.[9] Some way must be found to rehabilitate these areas and thus revive their economic usefulness and that of existing public utilities.

### Lack of Neighborhood Planning

Great waste of human life and money is chargeable to unsolved traffic problems. It has been estimated that traffic congestion in Manhattan costs $500,000 per day. This waste is not confined to the large cities. Through careful observation in Worcester, Mass., it has been estimated that congestion costs $35,000 per day; in Cincinnati, $100,000 per day.[10] The loss of life from traffic accidents has been brought into prominence, and campaigns for amelioration are gaining. Few realize that an outmoded street system, due to inadequate or complete absence of neighborhood planning, is the cause of a large part of this unnecessary waste.

Lack of neighborhood planning and control has permitted the sporadic intrusion of business and industry into residence districts. In nearly every large city, such invasion has cost owners immense sums in depreciated property values; and all too frequently a concomitant result has been the infection of blight, which has, in time, plunged what was once an attractive residence locality into a decaying slum.

Housing misplaced with reference to industry constitutes another major problem in nearly every city having any considerable number of heavy or nuisance industries. Dwellings constructed between bleak railway yards or in the midst of huge factories belching noxious fumes or clouds of smoke and soot are destined to become future slums. Stray dwellings in such sections are, moreover, not only out of place as homes; they actually prejudice the highest industrial development of the community. Lack of control of neighbor-

[8] *Urban Land Policy, St. Louis, Mo.* (Preliminary Draft) City Plan Commission, Harland Bartholomew, Engineer, September 1936.

[9] *Report of Board of Education of New York, N. Y.*, for 1935.

[10] *Regional Survey of New York and Its Environs*, Vol. III, p. 60.

hood environment has been one factor causing wholesale migration which the city has been unable to foresee or prevent.

The necessity of keeping a large proportion of the total urban area in a condition of transition and blight is highly questionable. Blight, it has been said, is both self-perpetuating and creative of more blight. The vicious circle of increased intensity of use causing increased land prices, followed by further intensity of use, has been observed by many to be a fundamental phenomenon of blight. The enormity of the problem may be envisioned when it is realized that the blighted areas of the average large city have been variously estimated as covering six or more times as much land as slums. These blighted areas are recognized as the reservoir from which slums are often created. Their potential power for rapid decay is admitted.

The slum is often a former blighted area which has waited in vain for deliverance by high land prices for commercial or other uses. Others are simply blighted areas that have fallen into further decay because of the individual owner's inability to rescue his properties from the influence of surrounding environment. Both types of areas looked to the speculator for salvation; and both have been disappointed.[11]

The abundant facilities and convenient location of slums and blighted areas often make them particularly desirable for rehabilitation. Neighborhood decay, however, makes it uneconomic to improve on a small scale because of the effect of surrounding conditions. In discussing the futility of improvement except through large-scale effort, Tracy B. Augur says:[12]

> Unfortunately the forces that tend to depreciate and destroy residential areas are inherent in the present-day composition of cities. They are embedded in the physical structure and in the social institutions that have grown out of it. They are too deep-rooted to be counteracted by small measures. Five acres of new buildings set down midst five square miles of blight have just about 1 in 640 chances of resisting the blight themselves. Unless quickly bolstered by reinforcements, or supported by most unusual conditions of site, composition, and sustained good management, they can be counted on for only a momentary flash before starting on the primrose path to slumdom.
>
> Slum clearance is not a matter of tearing down buildings; it is a matter of eradicating an environment that has proven bad for those who live in it, and dangerous to the community of which it is a part. The minimum in site planning for new housing is a wholesome urban environment. This may only be insured by providing a unit of urban life that is capable of maintaining itself, that has the internal strength to defend itself against whatever adverse pressure its surroundings may exert: a residential cell capable of building up so strong a community life within itself that it would be capable of resisting the tendencies to depreciation and disintegration that might take place in the city about it.

### Difficulty of Assembly of Large Urban Land Areas

In attempts to assemble large areas of urban land for low-rent housing developments, recreation areas, and other socially useful purposes, the significant types of obstacles include the unwilling seller, exorbitant asking prices often due to the provisions of zoning ordinances, curbstone brokers, defective titles, difficulties in inaccurate property-line records causing lapping and gaps, ownerships in litigation, going business houses requiring compensation for good-will in addition to the real estate, conscientious objectors (sometimes referred to as sentimental attachments), unexpired long-term leases, organized opposition, difficulties in dealing with many different nationalities, and unfavorable political sentiment.

Hold-outs, those who refuse to sell except for arbitrary or unreasonably high prices, have long been and will continue to be a major problem. The Housing Division of the Public Works Administration in assembling sites in large cities found that as many as 25 percent of the owners were in the "hold-out" class, often due to the activity of a few unscrupulous lawyers. In the smaller towns, less than 5 percent were so classified.

Typical defects in titles encountered in assembling land are breaks in the chain of title, outstanding interests in one or more heirs of a former owner who had failed to execute a deed with coheirs divesting them of title, unrelinquished dower rights, and mortgages, taxes, judgments, and other liens totalling in excess of the amount considered reasonable as payment for the property. In addition, there are cases where title is in the estate of a deceased person and the heirs either refuse or are financially unable to probate the estate, or where there are interests in the property outstanding in minors, or where deeds in the chain of title show an erroneous description of the land and it is not feasible to cure the description. There are also frequent cases of irregularities and breaks in the chain of title. There are cases where the vendor's title is based on a tax deed which is insufficient, or where the tax title proceedings are invalid for want of proper service and where quit-claim deeds cannot be obtained from persons against whom the tax sale was made.[13]

In many cases in order to secure good title, it is necessary to resort to quiet-title, partition, foreclosure, or con-

[11] For definitions, by various authorities, of the distinction between blighted areas and slums, see chapter I, *Urban Blight and Slums*, by Mabel L. Walker and others, Harvard University Press, 1938.

[12] *Proceedings, Joint National Conference on Housing*, Washington, 1935 (pages 50–51).

[13] Title to 13 percent of lands in Pennsylvania are defective because of their failure to show a transfer of ownership from the Commonwealth to the first individual owner. *Monthly Bulletin of Department of Internal Affairs*, Commonwealth of Pa., Vol. 1, No. 4 (March 1936), p. 15 *et seq.*

demnation proceedings. The Housing Division of the Public Works Administration reported that in its experience there had been no instance encountered in which the owner of a parcel of land was not ultimately able, regardless of the type or number of defects in the title, to convey to the Federal Government a title satisfactory to the Attorney General of the United States.

Slum and blighted areas are in numerous ownerships, whereas vacant or unimproved districts are frequently owned by one or a few parties. In the former class, there are usually numerous conveyances through a long period of years, naturally resulting in more defects than in cases of vacant areas where the exchanges have been fewer.

There are many home owners who have acquired their property through savings over a long period of years or whose property has been in the same family for several generations. These "conscientious objectors" desire to remain where they are, irrespective of the amount of the purchase price. As a practical proposition, these considerations do not make the property more valuable to the purchasing agency, and these situations require a delicate handling.

The difficulties arising in connection with the unwilling sellers, curbstone brokers, organized opposition, many nationalities, and unfavorable political sentiment must be dealt with as problems requiring the utmost skill in the technique of land assembly. If the exercise of that technique fails to overcome the obstacles to purchase of the land, then recourse must be had to condemnation proceedings.

### Adequate Use of Land in Private and Public Ownership

Every plot of ground not put to, or reserved for, its most appropriate use constitutes in effect so much of a drag upon national urban development. It is for this reason that no city can afford to ignore the manner in which privately-owned land within its borders is used and the restrictions on its best use. This means that matters relating to the examination of title, the sale and transfer of real estate, mortgage loans made to finance construction of new buildings or transfers of property, the lending policies of financial institutions, the foreclosure of defaulted mortgages and defaulted taxes, and the limitation of long-term leaseholds become problems vested with a public interest; for the manner in which they are solved may have the most profound effect upon the development of the community. Under our system of land tenure, the value of land depends greatly on the ease with which it can be bought and sold or mortgaged. A parcel having a cloud upon its title is quite sterilized as to marketability and as to development, too, for no mortgage loan will be made upon an unmarketable parcel.

Considerations such as these are often a major influence upon the prosperity of different sections within a city and, at times, even of the community, conditioning the mobility and, therefore, the availability of land for different uses. This, in turn, bears directly upon the rational development of the city along desirable lines, the security back of the municipal finances, the cost of housing and building, and the well-being of the entire community.

The acquisition of property for municipal purposes and the use and disposal of that property are hampered by antiquated provisions of substantive and procedural law which interpose serious difficulties in the way of proper civic development. As later sections of this report indicate in detail, these obstructions are present in slow, technical, and expensive condemnation proceedings, in unbusinesslike land purchase practices, in inadequate excess condemnation amendments, and in antiquated laws and practices relating to municipal acquisition and use of tax-delinquent property.

Nearly every city owns land which it either does not use at all or puts to a very ineffective use. In some instances, such land was acquired in anticipation of future needs, as sites for schools, markets, civic centers, plazas, parks, playgrounds, port and harbor development, or some other use; and yet after 10, 20, or 30 years the land still lies vacant and unused, piling up interest charges and lost taxes to swell the original high cost of acquisition.

There are other instances where the original use for which property was acquired has been abandoned, and yet after many years the property has not been put to another use. Abandoned schools, forsaken police stations, deserted city halls, unused markets, obsolete stables, rotting wharves, superseded reservoirs, canals which have not floated a tow boat for 50 years—such properties as these frequently represent the only remaining assets purchased from the proceeds of large bond issues marketed one or two generations ago. The bonds may or may not have been paid off, but nothing is being done to salvage the present value of these unused properties.

Short-sighted economy, parading in the guise of "thrift," "conservation," or "practical business sense" and taking the place of sound, long-term city planning, has usually resulted in penny-wise, pound-foolish costs to the community. In too many cases is this true of property acquired for public use.

# PART III—SECTION 2
# REVIEW OF PREVAILING URBAN AND SUBURBAN LAND POLICIES

## Municipal Ownership of Land

### Extent of Public Ownership of Land in American Cities

Although, even excluding areas in streets, many cities are the largest single holders of real estate within their boundaries, few municipal governments know the total amount of land they own. Figures on the amount of land held by county, State, Federal, and other governmental units within and in the environs of cities are even more difficult to obtain.

In order to get information on this subject for the present study, the Urbanism Committee of the National Resources Committee sent questionnaires to over 150 cities throughout the country, selected among those of over 10,000 population having planning bodies which it was thought could supply the data requested. Returns revealed that in most cities information as to the acreage of land in various public uses either was not available or could not easily be compiled. In other cities, only part of the figures requested were available. Only 21 out of the 150 cities supplied data complete and reliable enough for consideration.[1] Few of even these 21 cities were able to give complete data on land owned by all governmental units outside city limits but within the metropolitan or urbanized areas. Although these municipalities admittedly do not comprise a representative cross section of urban America, it is believed that they are sufficiently diverse, both in size and geographical location, to reveal significant relationships. A table showing the amounts of public land in various uses in and near these cities is included as an appendix to this report.

In spite of the inadequacy of the available statistics,[2] until such time as more cities can supply the neces-

[1] See appendix.

[2] In considering these findings, it must be borne in mind that there are great variations among cities and that, because the sampling is small, some special cases may excessively affect the computed averages. Unrealistic pictures of the actual situation may result, furthermore,

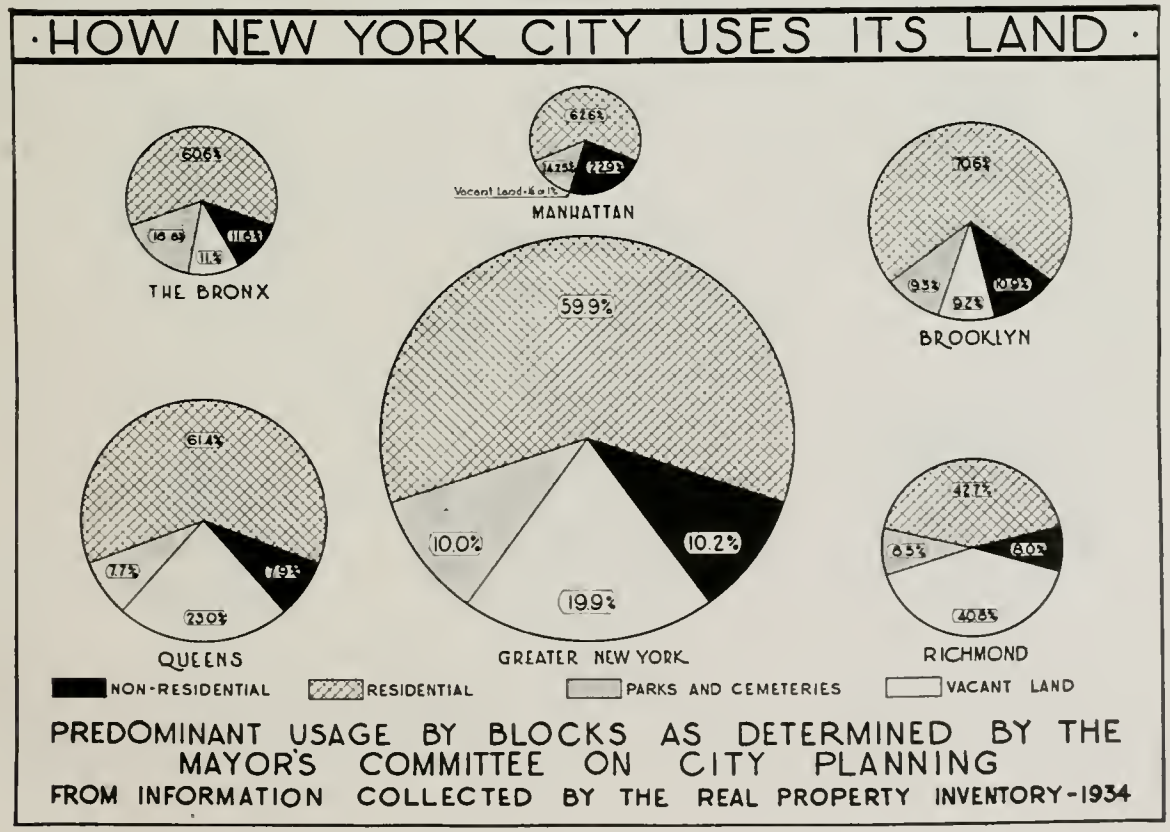



FIGURE 45

sary data, we believe that the following tentative findings are of significance:

(*a*) Excluding streets and alleys, most cities own from 5 to 15 percent of the total land area within their limits. Although there is great diversity among cities, even of nearly the same size, larger cities tend to own higher percentages of their *areas* than smaller cities. Because of the much greater density of population in larger cities, however, and because smaller cities tend to have more undeveloped territory within their limits, smaller cities tend to own more land in proportion to *population* than larger cities. This proportion tends to drop off for cities under 50,000 population.

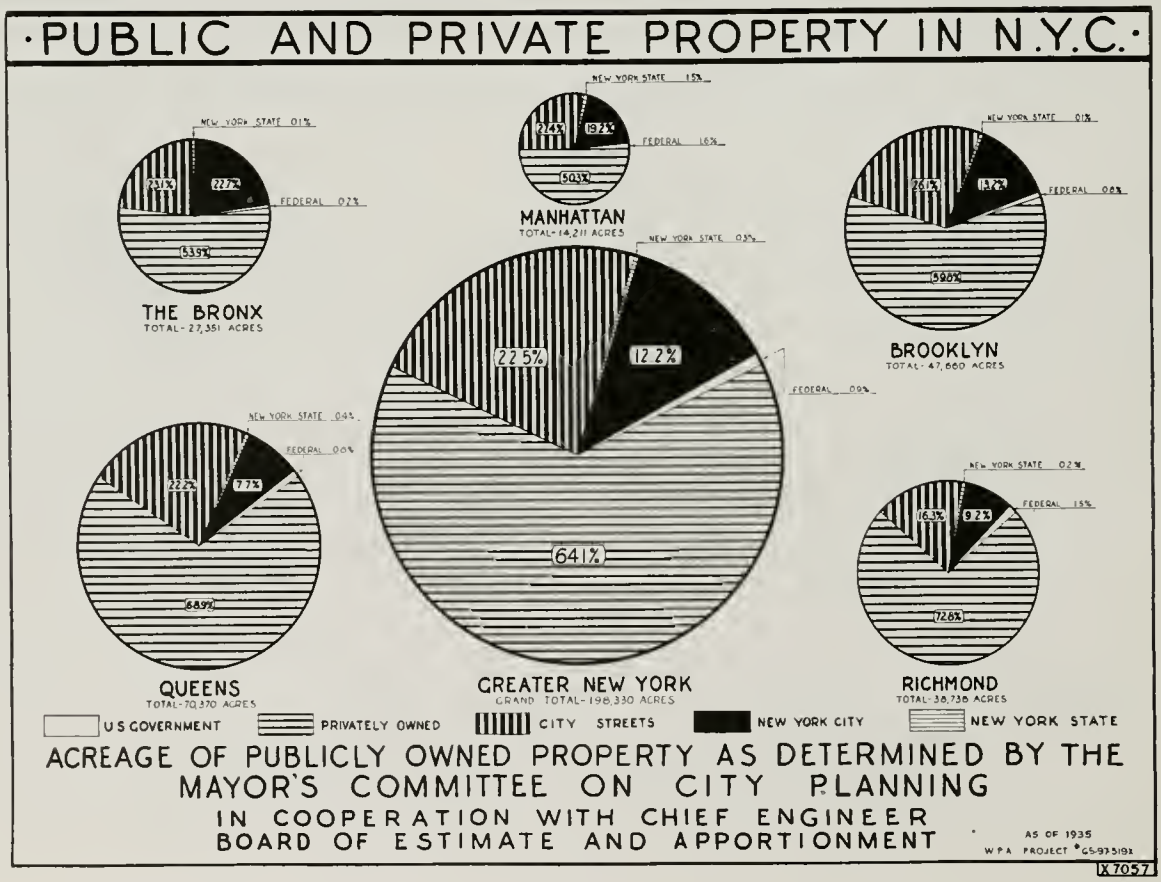
(*b*) Of this publicly-owned land, usually well over half and sometimes as high as three-fourths is used for parks and playgrounds. Few cities have park and playground areas amounting to 10 percent of their total area, the proportion frequently considered a desirable minimum. Larger cities tend to have greater proportions of their area in parks than smaller cities, although the only municipalities listed with more than 10 percent are the medium-sized cities of Yonkers, N. Y., and Duluth, Minn. In proportion to population, cities of medium size tend to be most adequately supplied with parks.

(*c*) In the case of many cities, park lands within city limits are supplemented by large tracts of municipal and county parks in the environs. Several cities own extensive parks outside the city limits, while county park systems around Milwaukee and Rochester comprise more area than all park land in the city proper.

(*d*) Percentage of total area used for local public education—including schools, libraries, and museums, but excluding State universities—does not vary among cities as markedly as park areas, although the range is from 1.88 percent for Tucson, Ariz., to 0.28 percent for Norwalk, Conn. In general, in proportion to population, the smaller cities are more adequately supplied with school sites.

(*e*) A number of cities own extensive areas used for public enterprises such as incinerators, sewage-disposal

from the failure of some of the cities to report on every item, and the average may thus represent the situation in only a very few cities. Because of the highly selective process by which these figures were obtained, it is probable that the 21 cities replying are those in which special attention has been paid to public land holdings and in which the amounts of public land are above the average. It is expected, therefore, that the figures here given represent cities more plentifully supplied with public land than most American municipalities. Percentages of total city area given over to various uses are hardly comparable, moreover, unless allowance is made for the more or less extensive undeveloped areas to be found within most city limits. In many cases, therefore, the adequacy of land in certain uses can best be judged and compared between cities by the ratio of acreage to population.




From the *Progress Report of the Mayor's Committee on City Planning in Cooperation with the Works Progress Administration, New York City, June 1936*

FIGURE 46

plants, electric light and power plants, waterworks, and watersheds. Although some cities have considerable areas used for these purposes within their incorporated limits, the larger tracts are usually outside. Providence, R. I., for instance, owns outside its limits over 15,000 acres, or more than the total land area within its boundaries.

(*f*) Areas used for city halls, courthouses, fire houses, police stations, and institutions such as hospitals, prisons, and asylums almost uniformly use only small percentages of the city area.

(*g*) Land used for wharves, docks, and miscellaneous uses amounts to a considerable total in several cities.

(*h*) The percentage of city areas in streets varies from 12.5 percent for Duluth, Minn., to 46.3 percent for Tucson, Ariz., with an average of 23.6 percent. In proportion to population, larger cities have much less street area than smaller cities.

(*i*) State governments own rather large portions of a few cities. The average, however, is 1.31 percent. Federal lands are almost universally a small percentage of the total.

(*j*) The total land owned by all units of government within city limits, including streets and alleys, ranges from approximately 25 percent to 40 percent of the area of most cities. During the last century, this proportion has undergone considerable revision as municipalities have taken on more and more responsibility for supplying public services. All signs point to the continuation of the trend toward greater acquisition of land by municipalities.

A partial check on these figures and findings has been made by comparison with figures on park and street areas in 22 cities given in *Urban Land Uses*, by Harland Bartholomew.[3] These cities include fewer large and more small cities than those replying to the National Resources Urbanism Committee's questionnaire.

This comparison of the figures from the Urbanism Committee's questionnaire with those from Bartholomew's study shows considerable variations. Except in the case of the 200,000–50,000 population group, the Urbanism Committee cities generally have denser populations, as is to be expected because they include more large cities. In respect to park areas, the Urbanism Committee cities in the 200,000–50,000 group are much more adequately supplied and the smaller cities less adequately supplied. The cities in the 1,000,000–200,000 population group are better supplied in relation to area, but not as well supplied in respect to population.

TABLE 1.—*Ratio of street and park area to population and total city area*

[Comparing figures from the Urbanism Committee's questionnaire with those from "Urban Land Uses," by Harland Bartholomew]

| Population group | Number of cities in group | Acres in city area per 1,000 persons | Park area | | Street area | |
|---|---|---|---|---|---|---|
| | | | Acres per 1,000 persons | Percent of total city area | Acres per 1,000 persons | Percent of total city area |
| Urbanism questionnaire: | | | | | | |
| Over 1,000,000 | 1 | 27.6 | 2.03 | 7.35 | 6.1 | 22.1 |
| 1,000,000–200,000 | 8 | 65.9 | 4.40 | 6.75 | 15.0 | 23.3 |
| 200,000–50,000 | 7 | 173.1 | 12.40 | 6.49 | 27.0 | 15.1 |
| 50,000–5,000 | 5 | 195.3 | 2.08 | 1.34 | 49.8 | 36.2 |
| All urbanism cities | 21 | 130.6 | 6.36 | 5.40 | 27.0 | 23.6 |
| Bartholomew study: | | | | | | |
| 1,000,000–200,000 | 2 | 89.5 | 5.11 | 5.96 | 18.1 | 20.3 |
| 200,000–50,000 | 10 | 135.6 | 4.66 | 4.11 | 24.2 | 19.5 |
| 50,000–5,000 | 4 | 215.5 | 4.94 | 2.68 | 43.3 | 21.7 |
| Self-contained cities | 16 | 150.0 | 4.79 | 3.98 | 28.2 | 20.2 |
| Satellite cities, 50,000–1,000 | 6 | 187.0 | 1.09 | .72 | 30.1 | 16.8 |

[3] *Harvard City Planning Studies IV*, Cambridge, 1932.

TABLE 2.—*Comparison of cities and population*

| Urbanism questionnaire | | Bartholomew study | |
|---|---|---|---|
| City | Population, 1930 | City | Population at date of survey |
| New York, N. Y. | 6,930,446 | | |
| CITIES WITH POPULATION 1,000,000–200,000 | | | |
| St. Louis, Mo. | 821,960 | | |
| Milwaukee, Wis. | 578,249 | | |
| Minneapolis, Minn. | 464,356 | | |
| Indianapolis, Ind. | 364,161 | | |
| Rochester, N. Y. | 326,132 | | |
| Louisville, Ky. | 307,745 | Louisville, Ky. | 307,808 |
| Providence, R. I. | 252,981 | San Antonio, Tex. | 231,542 |
| Dayton, Ohio | 200,982 | | |
| CITIES WITH POPULATION 200,000–50,000 | | | |
| Oklahoma City, Okla. | 185,389 | Fort Worth, Tex. | 152,730 |
| Nashville, Tenn. | 153,886 | Vancouver, B. C. | 143,560 |
| Yonkers, N. Y. | 134,646 | Tulsa, Okla. | 141,281 |
| Norfolk, Va. | 129,710 | Peoria, Ill. | 105,155 |
| Duluth, Minn. | 101,463 | Knoxville, Tenn. | 100,201 |
| Pasadena, Calif. | 76,086 | Sacramento, Calif. | 90,352 |
| Lincoln, Nebr. | 75,933 | Binghamton, N. Y. | 77,607 |
| | | Springfield, Mo. | 57,245 |
| | | Cedar Rapids, Iowa | 55,731 |
| | | San Jose, Calif. | 55,067 |
| CITIES WITH POPULATION 50,000–5,000 | | | |
| Phoenix, Ariz. | 48,118 | San Angelo, Tex. | 27,711 |
| Norwalk, Conn. | 36,019 | Jefferson City, Mo. | 17,572 |
| Tucson, Ariz. | 32,506 | Cape Girardeau, Mo. | 15,323 |
| Michigan City, Ind. | 26,735 | Troy, Ohio | 8,697 |
| Medford, Oreg. | 11,007 | | |
| SATELLITE CITIES | | | |
| | | University City, Mo. | 23,430 |
| | | Maplewood, Mo. | 12,133 |
| | | Clayton, Mo. | 8,902 |
| | | River Forest, Ill. | 8,901 |
| | | Ferguson, Mo. | 3,807 |
| | | Shrewsbury, Mo. | 1,525 |

Because the Urbanism Committee cities are both those with enough interest in public land ownership to have available figures, they probably possess, as already suggested, somewhat larger proportions of public land than most cities. The generally larger park areas in these cities may be partly due to this factor, and also to the fact that the Bartholomew cities even in each population group are smaller.

In respect to street area per 1,000 persons, the correspondence between the Urbanism Committee and Bartholomew figures is rather close. In percentage of area covered by streets, the two sets of figures vary. Undoubtedly this is partly due to the large areas of undeveloped territory lying within the city limits of some cities. This comparison of Urbanism Committee and Bartholomew figures reveals inevitable variations of statistics based on limited sampling. Nevertheless, the broad correspondence between the two sets of figures serves to confirm the general validity of the findings already given.

**Municipal Land Ownership in Europe**

In comparison with the extent of municipal land holdings in Scandinavian and Germanic countries, the amounts of land owned by American cities are rather meager. Many municipalities in Northern Europe have long held considerable amounts of land, some of these handed down from medieval times. In some countries, this has been augmented by large grants from forests and estates of the national domain. In Finland, for instance, the State, up until the nineteenth century, gave land for founding towns, usually on condition that the full property rights should not be given to private individuals. Although this provision was modified late in the nineteenth century, towns still own practically all the land within their boundaries. By 1926, the total area of building sites sold by all Finnish municipalities amounted to only 3.5 percent of the combined areas of all towns.[4] Helsingfors, with an area of 6,300 acres, owns 13,000 acres of land, much of it outside of the city limits.

From the end of the nineteenth century, municipalities in Finland, Norway, Sweden, Denmark, the Netherlands, Germany, and Austria have pursued a systematic policy of steadily increasing their land holdings both within and outside the city limits. Since 1904, the land acquisitions of Stockholm, mainly for housing purposes, have amounted to over 20,000 acres, or five times the area of the original city.[5] The five next largest Swedish cities own from 47 percent to 80 percent of their administrative areas (Gefle, 80%; Norrkoping, 75%; Malmo, 49%; Helsinburg, 49%; and Gothenburg, 47%). Copenhagen, Denmark, owns over one-third of the total area available for building within its limits. Oslo, Norway, owns a suburb that is twice the area of the city. The Hague, Holland, possesses 4,408 acres, or 45 percent of the city area. Zurich, Switzerland, owns 5,621 acres, half of which is within the city.[6]

Vienna owns more than 15,000 acres, exclusive of streets, or more than one-fourth of its area. Exclusive of streets and railways, Berlin has a municipal domain of over 75,000 acres within its limits, embracing more than a third of its area, and owns another 75,000 acres of forest and agricultural land outside the city proper. All German cities over 50,000 in population own, on an average, 23.6 percent of their municipal territory,[7] exclusive of streets and land used for sewage disposal and other services, as compared with 9.8 percent for the sixteen American cities over 50,000 in population replying to the National Resources Committee questionnaire. In addition, most German cities own considerable tracts outside their limits, frequently larger than their holdings in the city proper. An outstanding example is Goerlitz, with an administrative territory of 7,546 acres and 72,430 acres of forest land.[8] In addition to land for public buildings, parks, and other uses common in American cities, German municipalities own extensive forests and agricultural estates managed either by the city or leased to private operators. In many cities, particularly since the war, much housing has been built on land leased or sold from the public domain.[9]

The following table summarizes the use of municipal land, excluding streets, railways, and land used for sewage disposal and similar services.

TABLE 3.—*Percentage distribution by specified uses of land owned by German cities over 50,000 in population, 1933–34* [1]

| Use: | *Percent* |
|---|---|
| Forests | 39.9 |
| Agriculture | 39.9 |
| Vacant Property | 5.6 |
| Parks and Gardens | 4.8 |
| Buildings | 4.6 |
| Miscellaneous | 5.2 |
| Total | 100.0 |

[1] *Statistisches Jahrbuch Deutscher Gemeinden*, 1935, p. 31. There are variations among cities of different size, but they are not of great significance for purposes of this report.

[4] Harvia, *Municipal Land in Finland*, Papers and General Reports of the International Housing and Town Planning Congress, Vienna, 1926, p. 39.

[5] See section of this report on Public Ownership of Land for Housing Purposes for further details.

[6] Stigler, George J., *Some Economic Aspects of Municipal Land Policies of American Cities*. 1932.

[7] *Statistisches Jahrbuch Deutscher Gemeinden*, 1935, p. 31 and p. 35.

[8] *Report on Urban Germany*, by Fritz Ermarth, Urbanism Committee of the National Resources Committee. This report (unpublished) gives further details on amount, use, and purposes of municipal land holdings in Germany.

[9] For further discussion, see section of this report on Public Ownership of Land.

This summary of municipal land holdings in some of the most progressive European countries draws attention to the relatively small amounts of land owned by most American cities. A subsequent section deals with the "Desirability, Pro and Con, of Increased Public Ownership of Urban Land."

## Methods of Acquiring and Disposing of Public Land

### Purchase

The charters of municipal corporations or the general statutes applicable thereto usually give cities the power to purchase, hold, and convey such real and personal property as their purposes may require. Cities have no general power to acquire and hold real estate as such. The acquisition must be for the purposes and needs of the municipality.

This limitation exists by virtue of the provision, found in practically every State constitution in one form or another, that no city shall be allowed to make any expenditures or to incur indebtedness except for a public purpose. What constitutes a public purpose is a matter for the legislature to determine, subject to review by the courts. Where property is purchased by a city, the purpose must come within the judicial interpretation of what constitutes a public purpose under the foregoing constitutional provisions. Where property is acquired by condemnation proceedings, the same test is applied by virtue of an additional provision found in State constitutions, to wit, that private property shall not be condemned for a public use without payment of just compensation. The effect of these provisions is the same, in that the public-use test must be applied in order to validate either purchase or condemnation proceedings. The conception of what activities are properly within the governmental or proprietary functions of a city is constantly enlarging and varies from time to time and from place to place. Thus, for instance, there is still doubt in some States as to whether or not our cities may purchase or condemn property for low-rent housing projects, to clear slums, or to improve blighted areas.[10] It seems to be firmly imbedded in our law, however, that a municipality may not engage in the purchase and sale of real estate per se; that is, it cannot become a real-estate dealer, buy real estate for investment or mere speculation or profit, erect a building merely for the purpose of renting it out, or take a lease of property merely for the purpose of deriving rent therefrom by subletting.

Where the highest court of a State finally determines that a purpose for which the legislature has authorized the acquisition of property is not in fact a public purpose, then the only remedy is by amendment to the State constitution.

A general grant of power to purchase and hold property does not include property beyond the territorial limits of the city, but the legislature may grant the power to acquire such property to the city. If property is required for a municipal purpose, the city may purchase it even though it has no immediate need therefor.

Although the provisions of many municipal charters are sufficiently broad to permit the purchase of land for public purposes without undue restrictions or technicalities, there are many others that are too narrow. Thus, where the statute authorizes a municipal corporation to take property for a special purpose, it cannot take the property for another purpose, not specifically permitted, even though it be a public one. In the absence of restriction in the charter, property may be acquired by a municipality by any ordinary method, but if the charter or applicable statutes describe a particular mode of acquiring property, it must be followed. An example of this is the requirement in some charters that there be ratification, by popular vote, of all purchases of property above a certain value.

Where a city is given the right to condemn but not to purchase, it cannot make purchases. However, the fact that the city is given the power to condemn for a specific purpose does not exclude its general power to purchase for such a purpose.

A city should have the power to purchase property for public use on the same terms that are available to private purchasers. If, for instance, a purchase on installment payments or a lease containing an option to purchase is deemed desirable, any legal restrictions on the city's power in that connection should be eliminated.

It would seem advisable that the provisions of new and existing city charters be made to accord with the broad language contained in the Model City Charter prepared by the Committee on Municipal Program of the National Municipal League (Revised Edition, 1933),[10a] which gives cities the power "to make local improvement and to acquire, by condemnation, or otherwise, property within or without its corporate limits necessary for such improvements. * * *" By such a provision, cumbersome restrictions on property acquisitions are eliminated.

There is no well-established practice or procedure in connection with municipal land purchases. A study of the practices in New York State (outside of New York City) indicated that the laws relating to the purchase of property other than the grants of power already considered do little more than designate particular officials to carry on negotiations, and there is no charter which

[10] Eminent domain is hereinafter discussed in a separate section. For a reference to decisions on these questions see footnote 22.

[10a] A further revision of this Model City Charter is expected to be published in 1940.

outlines a definite and businesslike appraisal and purchase procedure.[11]

In a few cities throughout the country, the function of land purchase has been assigned to real-estate offices or bureaus, specially set up to handle acquisition, management, and sale of land for all municipal departments. Excessive land prices often paid by cities, whether land is taken by purchase or condemnation, have been a major reason for the establishment of existing real-estate offices. Inefficiency, clumsy procedures, legal difficulties, conspicuous extravagance, and graft are found in the land acquisition history of all too many cities. In Rochester, for instance, when the city manager took office on January 1, 1928, he found that, under old authorization purchase ordinances, some of them dating back 10, 12, and 15 years, the city has purchased only 389 of the required 658 parcels at a cost of over $4,000,000 plus accrued interest. In completing these purchases, so as to stop interest charges and make possible the assessment of the improvement costs, in new acquisitions, the newly established real-estate division spent between 1928 and 1931 only slightly more than $2,000,000 for 342 parcels. The Rochester procedure includes the following steps:

Immediately on the passage of a purchase ordinance by the Council, the division makes an appraisal and secures another from the Rochester Real Estate Board. Conferences are held with the owners to secure prices to be reported to the council for approval or disapproval. Through successive disapprovals of high prices and continued negotiations by the division, reasonable prices are agreed upon in a large percentage of cases.[12]

In Milwaukee, prior to the establishment of the position of city real estate agent, it is estimated that the city paid an average of 50 percent more than it should have done for land acquisitions.[13] In the fiscal year ending in 1936, however, the city showed a net saving in 16 transactions of $310,963, representing the difference between actual purchase price and appraised or assessed values, or in some cases, asking prices or funds appropriated. This far exceeded the cost of conducting the real estate department for any fiscal year.[14] Savings are largely effected because the city real estate agent is an experienced real estate buyer, thoroughly versed in real estate values and trained to make the most of all psychological factors that are in his favor, securing far more advantageous terms than a relatively untrained buyer, however intelligent, might secure.

**Appraisal**

One of the most important elements of a businesslike purchase or condemnation procedure is the careful appraisal of the value of property before a final decision as to acquisition is made. The thoroughness and accuracy of such an appraisal largely determined the success of acquisition negotiations. There is great variety in the present practices of cities, ranging from no appraisal at all to the most careful appraisal by highly trained officials supplemented by independent appraisers. Sometimes, this important function is entrusted to the city engineer, the assessor, or a committee of the council and sometimes, to the local real estate board or one or more independent real estate brokers.

The valuation of property is a technical process which requires the services of trained and experienced appraisers. There are so many variables affecting the value of property that it is considered advisable to secure several independent appraisals. Through conference, differences of opinion among several independent appraisers may be reconciled and a final agreement brought about which is more accurate and more reliable than any single determination can possibly be. Such independent appraisals might well include the following: A determination of land and building values by the municipal officer charged with the acquisition of real estate; independent appraisals by two real-estate brokers, or by the local real-estate board; and a determination of the building value by a contractor or builder.[15]

Much of the information required for the appraisal by the municipal official is or should be already available in the department of assessment. With the increasing recognition of appraising as a scientific procedure the old rule of thumb methods in these departments are giving way to methods based on facts. The principal data consist of sale prices of properties in the immediate vicinity. From these data a land-value map may be set up to indicate the value of the land in question. Municipal assessment departments should have a record of the consideration and circumstances involved in all property transfers. At the present time such information is not readily available to municipal officials.[16]

In Milwaukee and Los Angeles, the municipal real estate offices have made excellent use of photographs and motion pictures to supplement other appraisal data. These pictures are used in both land and improvement appraisals and have been found to constitute very convincing evidence.

The final result of the appraisal procedure, after reconciling differences of opinion existing between the independent agencies, should be the fair market value of the property. Such a determination does not make any allowance for the fact that the owner may be selling at an unfavorable time, and that he will be

[11] Mariner, Elwyn E., *Condemnation Procedure and Land Purchase Practices in New York State Municipalities*, Publication #21, New York State Conference of Mayors and Other Municipal Officials, Albany, N. Y., 1933, p. 11.

[12] Allen, Warren W., *How Rochester Manages its Real Estate*, National Municipal Review, August 1931. Also letter from Harold W. Baker, City Manager, Rochester, N. Y., to Harold S. Buttenheim, October 21, 1936. Also Mariner (*supra*, note 1), at pages 11 *et seq.*

[13] Grieb, Edward, *What a Realtor Can Do for His City*. Milwaukee, 1923, p. 2.

[14] Report of the City Real Estate Agent to the Board of Public Land Commissioners. Milwaukee, September 8, 1936.

[15] Bernard, W. C., "Saving Time and Money for the City in Condemnation Procedure"; *American City*, Vol. 40, January 1929, pp. 89–91.

[16] Mariner, *op. cit.*, pp. 13–16. See also report on the preparation of a land-value map for Westchester County, N. Y., by Wayne D. Heydecker, 1933.

put to the inconvenience of moving, or, that in the case of a commercial enterprise, moving may result in a decrease of going-concern value. These must be considered in arriving at a price which represents just compensation. Not until such a price is set can the economic advisability of an acquisition be fairly determined. Without such a price a business-like acquisition procedure is not possible * * *

The value of purchase as a method of property acquisition lies in its simplicity and comparative effectiveness. Although it is generally conceded that purchase prices are liberal, the figures to be presented in subsequent sections will show that condemnation awards are even more liberal.

The practice of purchasing is, however, subject to one grave objection. There seems to be no feasible means of determining the total cost before the city commits itself. Under existing conditions when an improvement is considered and agreed upon, that action is based upon estimated costs. When acquisition has been agreed upon, agents of the city arrange for the purchase of those parcels which can be purchased at once at reasonable prices. After these are purchased negotiations are continued with the more obstinate owners and finally condemnation proceedings are instituted to acquire those parcels on which agreement is not possible. As soon as the city has purchased the first few parcels it must proceed at any cost or be burdened with real estate for which it has no use. In many cases the actual cost of property acquisitions far exceeds the casual or careless estimates on which the decision to improve is based.[17]

Leonard M. Wallstein's study of land acquisition practices in New York City recommended the following steps in chronological order:[18]

(*a*) That the comptroller promulgate a rule that negotiations must be directly with the owners of the property except under special conditions regulating the employment of brokers.

(*b*) That in order to make sure that options obtained by the department are binding, a statutory provision be enacted providing that an option to purchase property granted to the city for a limited time be irrevocable.[19]

(*c*) That the appraiser's report contain facts and not the usual general statements that the appraiser has "considered relevant sales of other property," has "taken opinions of real-estate men," and has concluded that a given price is "reasonable."

(*d*) That the seller be examined under oath pursuant to charter provisions as to the persons interested in the property, the price paid by the owner of the property, the interest of any other person, firm or corporation, as broker or other intermediary, in effecting the proposed sale to the city, and the fair market value thereof.

(*e*) That the report to the board of estimate by the department of finance include the following:

1. The history of the title to the property and the assessed value thereof.
2. In the case of transfers within two years, the consideration for such transfers, this information to be obtained by the examination hereinbefore described.
3. A statement of relevant sales of neighboring property, the names of the sellers and purchasers, and the prices paid, and a statement of the sources from which the information is obtained.
4. Such other information and data as may have been considered by the department of finance in arriving at the value of the property.

**Condemnation**

Probably no procedure as set forth in the statutory law of all States in this country is in greater need of immediate and radical revision than the procedure for the condemnation of property for public use. There is not only a bewildering variety in the procedures required by different States but also an unnecessary and complex variety of procedures in each of the States themselves. Only six States provide for a single uniform system applicable to all condemnation procedures in the State. Pennsylvania has thirty-six different administrative procedures. In the States requiring or permitting judicial methods, Arizona, New Hampshire, and Pennsylvania have ten, Delaware eleven, Missouri thirteen, Nebraska fifteen, and Michigan seventeen different systems. A single system is feasible and desirable.

The present systems result in unnecessarily technical and expensive proceedings, in long delays which are adverse to the interests of all parties, and in excessive awards. Not merely the statutory provisions but the rules of evidence and administrative practices used or applicable in connection therewith require reform.

The limitations of space in this report do not permit a detailed analysis of the laws in the respective States, nor a detailed discussion of recommendations for a model statute, but a few of the more important provisions can be mentioned briefly.

Constitutional limitations and requirements of many States would hamper the adoption of any proposed uniform statute, but constitutional amendments are not unknown, and considerable progress could be made even without them. The chief constitutional provisions which affect condemnation proceedings include the usual provision that private property shall not be taken for public use without just compensation. This provision is found in all but two of our State constitutions and will be discussed hereinafter. There is also the general provision that no person shall be deprived of property without due process of law. Other constitutional provisions include requirements for the payment of compensation in advance of the taking or for a jury trial, provisions that prohibit the setting off of benefits

[17] Mariner, *op. cit.*, pp. 17–19.

[18] Wallstein, Leonard M., *Report on Law and Procedure in Condemnation Applicable to Proceedings Brought by the City of New York*, 1932, pp. 372–378.

[19] Such a provision is contained in Sec. 119 of the Public Housing Law of New York State in connection with the acquisition of property for public low-rent housing projects.

from the damages, and the requirement that the necessity of the taking shall be determined by the court or in some cases by a jury.

No proposed uniform statute covering condemnation of property for all public uses has ever been formulated. However, there are two suggestions that are worthy of serious consideration. The first is the State statute known as the "Public Works Eminent Domain Law" formulated by Federal officials in 1934 to assist States to obtain property expeditiously in furtherance of the public works program contemplated by the Emergency Relief Administration Act of 1935. That model statute has been adopted in the five States listed in the footnote.[20]

The other suggestion is contained in "Condemnation Procedure," a study of the history and present status of condemnation procedure in the United States and elsewhere, prepared by Roy Robert Ray and published as an appendix to the first report of the judicial council of Michigan in 1931. Although we may at times disagree with Mr. Ray's conclusions for provisions in a model condemnation statute, yet no student of this subject can afford to be without the factual material contained in his report.

The difference in the administrative type and the judicial type of condemnation procedure has been described by Mr. Ray as follows:

> SEC. 43. *The administrative type.*—Under this type the officers of a municipal corporation or directors of a public-service corporation, having authority from the legislature to exercise the power of eminent domain, pass a vote or resolution to take certain designated land, and upon the filing of this vote or taking in the registry of deeds of the county, the title to the land or to the appropriate easement therein immediately vests in the body politic or corporate on behalf of which the taking was made. An award of compensation to the owners is usually made at the same time. But the taking of the land and the award of compensation are administrative ex parte acts of which the owner is not entitled to notice in advance and to which he is not a party. It is quite usual, however, for the officers who are to make the taking to hold a preliminary public hearing. After the taking the owners of the land taken are notified and if any owner is dissatisfied with the award he is allowed to institute proceedings in court for a new award, and the amount of the damages is finally determined by a jury or other impartial tribunal. He is usually allowed a year or more in which to bring suit. The landowner thus becomes the plaintiff and the corporation the respondent, a personal judgment in favor of the landowner is entered for the amount awarded and he will eventually get his money with interest from the day of the taking, although it may be some time after he is deprived of possession.
>
> SEC. 44. *The judicial type.*—Under this type, a corporation, municipal or private, a political subdivision, or any other party invested with the power of eminent domain which desires to take private land, first complies with the necessary preliminaries. Then it files a petition in court against the owners of the land asking the court to determine the value of the land and authorize the condemnation thereof, upon payment of the value determined. The owners after having been served with notice come in and defend. A hearing is had upon the right of the party which instituted the proceeding to take the land in question. If this is decided in the affirmative, the compensation to which each owner is entitled is fixed by commissioners or by a jury, or such other tribunal as the constitution and statutes provide. A decree is then entered that the land may be taken upon payment of the amount awarded. But no definite judgment for the award is entered against the petitioner or party seeking the land. Title to the land does not pass until the money is paid and at any time before payment the party which instituted the proceedings may discontinue or abandon them and thus escape liability for the award.

The chief advantage of the administrative type is its speed; while its weakness is that the cost of the public improvement cannot be known in advance of the taking, and after it becomes known, the petitioner has no opportunity to abandon the improvement. This disadvantage is not present in the judicial type, which is, however, subject to many, and often long, delays in consummation. Inasmuch as it is impossible to incorporate the abandonment feature in the administrative method, while it may be possible to speed up the judicial method, the latter seems preferable. This is especially true if the statute contains a provision permitting the petitioner to occupy the premises pending the action, thus permitting prompt commencement of the work on the proposed improvement.

Few States have a "condemnation law" as such. Most of them have provisions relating to eminent domain scattered all through their volumes of statutory law. Hence, the first step in formulating any single statute would be to provide in the statute a classified list of all corporations, municipalities, wards, commissions, public officers, and persons authorized to exercise the power of eminent domain, with a specification of the uses and purposes for which each class may exercise the power.

In many States, municipalities are in a special position with regard to the taking of land, in that they may acquire title to property by condemnation, without first making payment or giving security that compensation will be paid to the owner. However, many municipalities, and particularly subordinate corporate instrumentalities, such as bridge, tunnel, or housing authorities, are required to make payment or post security before entry by the condemnor is permitted.

The primary disiderata of any scheme for compulsory land acquisition are cheapness and speed. The latter involves a number of essentially different problems. From the point of view of the condemnor, the chief problem is that of speed in utilizing the property for public purposes, and hence we frequently find provisions for possession by the condemnor, prior to

[20] Arizona laws of 1935, Ch. 102; Arkansas act approved Apr. 2, 1935; Nevada laws of 1935, Ch. 135; North Carolina laws of 1935, Ch. 470; South Carolina act approved July 17, 1935.

the final decree in the condemnation proceedings. Another aspect of the problem of speed relates to the early termination of the judicial proceedings. Delay here affects the condemnor only in relation to the amount of interest to be paid on the award, but it frequently is of great importance to the property owner. Interest generally runs from the date of title vesting, but where the condemnor enters upon the property before that time, interest runs from the date of entry. In short, interest is supposed to compensate the owner for loss of rents and profits from the time that he is compelled to give up possession or title to the condemned property; but, as a matter of fact, interest seldom fully compensates the owner for the delay in securing compensation. It is, therefore, to the advantage of both the taker and the owner that the compensation be made promptly. Expediting condemnation proceedings involves, in the main, proper judicial administration, expeditious calendar operation, and appropriate statutory condemnation procedure.

There are numerous technical phases of the subject that should be thoroughly studied. Included in these are questions involving the combination of proceedings where more than one official agency is interested in acquiring adjacent land, the condemnation of reversionary rights, and the possibility of condemning property for use for a specified period.[21]

The investigation of condemnation proceedings in New York City by Leonard M. Wallstein showed that excessive awards were in a large part due to the rules of valuation and particularly to the rules of evidence as to valuation data employed by the courts. The Wallstein report concluded that the presentation to the court of all the relevent evidence of value would enable the tribunal to arrive at a more accurate estimate of the condemned property. The New York law as set forth in the cases even ruled out evidence of sales of similar property in the neighborhood on direct examination. Such evidence is now admissible, under amendments to the charter of New York City, which provide elaborate safeguards for the accuracy of testimony on this point. The chief safeguard is the provision for an examination before trial of grantors and grantees, in order to determine the sale prices of similar property.

Legislation resulting from the Wallstein report requires that the assessed valuation for 3 years preceding the date of institution of the condemnation proceedings should be set forth in the petition to condemn the property. In this way, the assessed valuation is brought to the attention of the court, and at the same time, technicalities which surround the admissibility of this evidence are avoided.

**What Constitutes a Public Use?**

The constitutional provision that private property shall not be taken for public use without just compensation has generally been interpreted to mean that private property cannot be taken for a private use but only a public use. Public use is usually not defined in the constitutions. The courts have differed widely from time to time and from place to place with respect to their interpretation of what constitutes a public use. Many decisions of the courts in the more conservative States are based upon the old theory that any property taken in condemnation proceedings must be open to use by the public, as in the case of parks, playgrounds, streets, museums, and the like. On the other hand, the taking of property for many other purposes where the general public had no right to use physically the property taken has been upheld. These decisions include cases where the right has been given to public-service corporations to erect utility plants or to railroads, or where public agencies have taken property for poorhouses, cemeteries, hospitals, and the like.

There are, therefore, two distinct schools of judicial thought on this point; the conservative one, which tries to adhere to the original but badly warped doctrine that the property must be open to physical use by the public; and the liberal, which interprets public use according to what is construed to be a public purpose and for the public welfare at the time and in the place where the property is acquired.

Of primary interest to those concerned with the adoption of sound land-use policies and the furtherance of the welfare of our municipalities is the question of whether or not the power of eminent domain may be invoked by public and semi-public agencies to erect low-rent housing projects or to clear slums and then to use the property for the purposes for which it may be best fitted. The highest courts in sixteen States [22] have held that the clearance of slum areas and the erection of low-rent housing projects were public uses and purposes for which a municipal housing

[21] As bearing on the causes for dissatisfaction with the existing statutes and the need for a model statute, the reader is referred to Coleman Woodbury's summary of two of the major problems—the actual procedure and evidences of land value—in his excellent paper on "Land Assembly for Housing Developments," *Law and Contemporary Problems*, Vol. I, No. 2, March 1934, at pp. 215 *et seq.*

[22] For a list of these decisions, see "An Index of Major Issues in State Decisions on Housing Authorities' Laws," a report of the Legal Committee of the National Association of Housing Officials, 1939. For decisions that the reclamation of a substandard area alone (as distinguished from its use for housing purposes) is a public purpose, see two decisions (without opinions) in proceedings brought on behalf of the Alley Dwelling Authority of the District of Columbia in the United States District Court for the District of Columbia, entitled "In the Matter of Condemnation of Part of Lot 29" etc., Docket No. 2464 (Decision, May 18, 1937) and "United States of America *vs.* Certain Lands in Square 3072," etc., Docket No. 2509 (November 1937).

authority could exercise the power of eminent domain. The question of whether or not the Federal Government could exercise that power for the same purposes has never been determined by the Supreme Court of the United States, although in one case the lower courts decided the question adversely to the Federal Government.[23]

The cases involving the right of municipalities to condemn property in order to eliminate slums and to provide low-rent housing projects must be chosen and litigated with the utmost care and skill. In the event that the decisions of the highest courts of any States are adverse to the municipalities, then it will be necessary and desirable to obtain constitutional amendments in those States, granting the power to the municipalities.[24]

Advocates of increased ownership of land by municipalities are often concerned with the amount of the awards made by the courts in eminent domain proceedings. In many cases, the awards have been the subject of public scandal. In others, they merely have been much higher than the amounts that would have been obtainable by the owner in a transaction between two private parties. The suggestion has frequently been made that legislatures should limit the amounts which may be awarded by the courts and set up some arbitrary standard for fixing the "just compensation" to which the owner is entitled. The fixing of such a standard, as, for instance, at assessed valuation, is unconstitutional and void.

The Supreme Court of the United States has held that the determination of the measure of compensation is wholly a judicial and not a legislative question. Therefore, no legislature can set an absolute standard for determining that question. Attempts by legislatures to do so have been stricken down by the courts. The amount of compensation awarded by the courts becomes particularly important where the property is to be used for low-rent housing projects. Nevertheless, any effort to cope with this problem by way of legislative limitation on the amount of awards can only be valid after the passage of amendments to State (and perhaps also to the Federal) constitutions. As far as we are aware, no such constitutional amendments have ever been presented to any legislature for consideration.[25]

Needless to say, we recommend a thorough reconsideration and overhauling of constitutional and statutory provisions in practically every State relating to the exercise of the power of eminent domain, and we urge that insofar as it is constitutionally practicable, and desirable to do so, the procedures be made uniform.[26]

**Purchase and Condemnation Compared**

A discussion of these two methods of municipal land acquisition naturally leads to certain questions.

Is one method more desirable than the others? If so, should it be the sole method used? Some light on the answers may be found in the Wallstein and Mariner reports heretofore referred to.

Mr. Mariner's investigation indicated that the prices paid for property condemned exceeded estimated values by a greater precentage than did the prices for properties purchased. In the condemnation proceedings considered, the awards averaged 43 percent greater than the estimates of value made by the city; while in the purchase proceedings, they generally exceeded actual value by about 10 percent. Thus, the conclusion followed that so long as present conditions continue, every effort should be made to purchase necessary property at or near its appraised value. After pointing out that purchase is at present more advantageous than condemnation not only because of the results achieved but also because of its relative simplicity, Mr. Mariner comes to the conclusion that if, as, and when condemnation procedure is improved so that the total cost of acquisition by that method shall not be appreciably greater than the cost of acquisition by purchase, then condemnation should be the sole method of acquisition adopted by municipalities.

We are inclined to agree strongly with Mr. Wallstein that both methods have and will continue to have their appropriate place in any well-regulated and well-considered municipal land acquisition program. It should be borne in mind that the experience of many states has led them to insert a requirement in their condemnation

[23] *United States of America* v. *Certain Lands in Louisville*, etc., 9 Fed. Supp. 137; affirmed 78 Fed. (2d) 684. The appeal to the United States Supreme Court was withdrawn upon request of the attorneys for the Government.

[24] For a detailed discussion of this phase of the subject, see the article entitled "The Use of Eminent Domain for Housing Purposes" by Ira S. Robbins in the *Housing Officials' Year Book* (1936).

[25] For a detailed discussion of legislative attempts to limit awards in condemnation proceedings, see *Urban Blight and Slums*, by Mabel L. Walker and others, Harvard University Press, 1938, pp. 184-190.

[26] References: *Valuation under the Law of Eminent Domain*, by Lewis Orgel (1936): "Condemnation Procedure by Roy Robert Ray," published in the *First Report of the Judicial Council of Michigan* (1931); *The Condemnation Procedure of Twenty-four Cities*, published by the Detroit Bureau of Governmental Research, Inc. (1931); *Condemnation Procedure in Kansas City*, published by the Kansas City Public Service Institute (1931).

Miscellaneous articles in *Kansas Judicial Council Bulletin*, April 1932 to July 1933, incl.; "An Analysis of Condemnation Procedure in Portland," published in Portland (Oregon) *City Club Bulletin*, Vol. XI, No. 31, December 19, 1930; "Acquiring Land for Public Improvements," by W. C. Bernard, in *Proceedings of 22nd National Conference on City* Planning, pp. 76–86 (1930); "The Acquisition of Land for Public Improvements," by C. W. Berry, published in *City Problems* (1931), pp. 83–87; *Condemnation Procedure and Land Purchase Practice in New York State Municipalities*, by Elwyn E. Mariner, being Publication No. 21 of the New York State Conference of Mayors *et al.* (1933); *Report on Law and Procedure in Condemnation Applicable to Proceedings Brought by the City of New York* by Leonard M. Wallstein (1932). For a discussion of problems involved in condemning property for use; for toll bridges, see "Condemnation of Private Property for Public Use," by Leonard A. Weakley, published in *Proceedings of American Toll Bridge Association*, vol. IV (1936), at p. 36 *et seq.*; for parks and playgrounds, see *Recreation*, vol. 25, pp. 38–48 (April 1931).

statutes that the proceedings should be commenced only after an attempt to purchase has been unsuccessful. Purchase offers another advantage in that, in most cases, a city may use the property for any city purpose after it has been acquired, while under many condemnation statutes, the property may be used only for the specific purpose recited in the resolution authorizing the condemnation. In some jurisdictions, the attempt to use the condemned property for other city purposes may be blocked by legal technicalities.

Our studies indicate clearly the need for a thorough and complete investigation of land purchase and condemnation laws and practices in practically every state of the union and the formulation of proper purchase and condemnation procedures that will efficiently and equitably work to the best interests of the property owners and of the public.[27]

**Land Assembly Technique**

The land assembly technique commonly used prior to the advent of the recent large scale Federal housing operations is not suited to the speedy and economic development of such projects. Limitations of space do not permit a discussion here of that technique. It is sufficient to point out that, in order to avoid speculation, excessive prices and endless delays, and in order to obtain sound appraisals, a factual basis for land valuation, and a cooperative and not an obstructionist attitude on the part of land owners, modifications of the old procedure or an entirely new technique are necessary.[28]

The Housing Division of the Public Works Administration, the Resettlement Administration, and the Treasury Department are the chief Federal agencies which have had considerable experience in land assembly in metropolitan areas. The Federal Housing Administration and the Home Owners' Loan Corporation have given considerable attention to the appraisal problem. There are many other agencies, however, such as the Port of New York Authority already mentioned, which have acquired land not for housing but for large public projects. In addition, there have been notable instances of assemblage by private enterprise, such as the Tudor City and Knickerbocker Village developments in New York City. There is no published work which describes the experiences of the sponsors of the various housing projects, the techniques adopted, and the recommendations made in the light of those experiences and techniques. A comprehensive study of this subject is badly needed.[28a]

**Excess Condemnation**

Excess condemnation is commonly defined as the policy of taking, by right of eminent domain, more property than is necessary for the creation of a public improvement but for a purpose incidental thereto. As Frank B. Williams has pointed out, it "is the somewhat unfortunate name in the United States for a development of the power of eminent domain exercised under various names in most European countries. There, as here, private land can be condemned only for a public use. It follows that land only in an amount sufficient for that use can be so taken. The advocates of excess condemnation, so-called, claim that there are many cases in which land just outside the physical limits of the principal enterprise should be appropriated for purposes incidental and thus a part of it. To call this 'excess' condemnation is to admit that the claim is unfounded and the taking illegal. A better name would be 'incidental' condemnation; but it is probably too late to make the change."[29]

As we have heretofore seen, the power of eminent domain can be exercised only where the property is to be taken for a public use. Many early judicial decisions in this country confined the taking to cases where the property was actually to be used by the public as distinguished from the later cases permitting a taking where it was for the general welfare. Because of their reluctance to adopt a broad interpretation of public use, the courts have been loathe to uphold legislation permitting the taking of property needed incidentally to public improvements, especially if the incidental property might thereafter be sold. The fact is, of course, that if the excess property taken is actually for a public use, its taking in an ordinary condemnation proceeding should be upheld. Excess condemnation is in reality an extension of condemnation into a field in which it has not previously been employed. Inasmuch as it is for a public use, it should be upheld without the necessity of state constitutional amendments, which are, as has been pointed out, "a clumsy method of broadening the law to meet city planning needs and conceptions." As a practical proposition,

[27] The Port of New York Authority and the Long Island State Park Commission have acquired millions of dollars worth of property, chiefly by purchase, though occasionally by condemnation. These agencies perform specialized functions and are not municipal agencies. Their experience, nevertheless, is of interest particularly because it contrasts with the results found in the Mariner and Wallstein investigations.

In this connection, see appendix G, entitled "Experience of Other Agencies," at pp. 594–595 of the Wallstein report, and ch. 10 of *The Port of New York Authority—A Monograph*, dated April 15, 1936.

[28] For a discussion of former practices in land assembly and suggestion for changes, see the article by Coleman Woodbury, Executive Director of the National Association of Housing Officials, "Land Assembly for Housing Development" in *Law and Contemporary Problems*, vol. 72, March 1934, at pp. 214 *et seq.* For a discussion of various techniques, see *Urban Blight and Slums*, by Mabel L. Walker and others, chapter, "Problems of Land Assembly," by Ira S. Robbins, pp. 172 *et seq.*, Harvard University Press, 1938.

[28a] Since the foregoing was written, numerous local housing authorities have assembled large sites for low-rent projects financed with the aid of the United States Housing Authority. No study of their experience has yet been published.

[29] *The Law of City Planning and Zoning*, p. 59.

however, a long series of adverse decisions appear to make constitutional amendments necessary.

One purpose of the procedure is to deal with the problem of lot remnants. It frequently happens that odd fragments of land remain abutting the thoroughfare after a new street has been cut through or an old one widened. Irregularity of size or shape may render these lots useless. Where excess condemnation is permitted, a city may condemn the remnants and the land adjacent thereto in addition to the land actually necessary for the improvement. Upon completion of the improvement, the city may replot the remainders and sell them to the public, or it may sell them to adjoining owners who are thus enabled to replot their land so as to absorb the remnants advantageously.

A second purpose is to protect the beauty and usefulness of public improvements. Where a city contemplates the creation of a boulevard or park, the surrounding area should be a factor which enhances rather than diminishes the desired effect. To assure the character of such surroundings, the city may condemn adjoining land in excess of the land essential to the street or park. This land may then be replotted and sold with restrictions to maintain desirable standards. Early application of this theory is found in the planning of the Capitol of Virginia.[30]

A third purpose for which excess condemnation may be used, is for recovery of expenses incurred in making an improvement. Land required in the construction of a street or park may be very expensive. Frequently, as a result of the improvement, the value of surrounding land is increased. The theory, therefore, is to condemn as much of the territory neighboring a proposed improvement as is likely to be benefitted thereby. Theoretically, again, the city pays for this land in terms of its original value and, after replotting it, sells it at its enhanced value. Thus, the city may not only defray its expenses in making the improvement but may also realize a profit.[31]

[30] *Modern Government in a Colonial City*, by Luther Gulick.

[31] Bassett, Howard M., "Some Problems in Excess Condemnation," *City Planning*, vol. 9, pp. 114 ff.

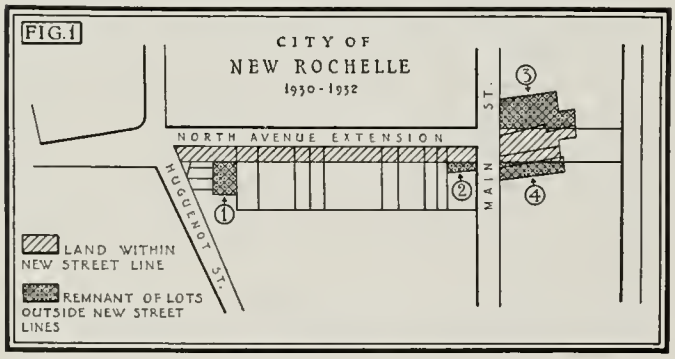



FIGURE 47.—Lot remnants

As we point out later, the use of excess condemnation solely for recoupment purposes is frowned on by legislatures, the courts, and students of the subject. There is also some feeling that, due to the weaknesses in our condemnation statutes and their administration, its practical usefulness for recoupment purposes is open to doubt, although a thorough study of the results obtained to date is needed. In our opinion, with improved condemnation statutes and the administration thereof, it would be an important factor in securing to the city the full fruits of its improvement operations, in lieu of the present system of presenting an unearned increment to some fortunate neighboring owners or speculators.

A collateral but important result of incidental or excess condemnation proceedings may be the removal of parts of slum areas which, in turn, may lead to a complete rehabilitation of such areas. Although the procedure has not been used for this purpose in this country, it has many enthusiastic and prominent advocates.

Though not broadly accepted, nor widely understood, excess condemnation is not a new concept. Its use in this country is reported as early as 1699. It was first employed in New York City under a grant of power from the State legislature in 1812. From that time until 1832, the city took at least 24 plots beyond those actually necessary to improvements. Among these were 15 small remnants which were sold mostly to adjoining owners. In 1834, the taking of excess land was declared unconstitutional by the Supreme Court of New York on the grounds that the taking was not a public use.[32]

Thereafter, excess condemnation was virtually dormant in the United States until early in the twentieth century.

In the meantime, England adopted the practice in 1845. In the fifty-odd years that followed, $49,000,000 was recouped in connection with excess condemnation as exercised by the City of London.[33] "These large figures," says Edward M. Bassett, "are noteworthy, for the effort went beyond the mere handling of remnants of lots and became a very ambitious policy of slum clearance." [34]

Other European countries adopted excess condemnation: France in 1850, Italy in 1875, and Belgium in 1867.

[32] *Matter of Albany Street*, 11 Wend. 149. In *Dunn* v. *City Council of Charleston* (16 South Carolina, sometimes cited as Harper's Law Reports, 189, Supreme Court of South Carolina, 1824), a question arose involving a statute (7 Stat. 136) which permitted the city to purchase, or if the owner refused to sell or demanded an unreasonable price, to condemn excess land in street-widening proceedings. The court sidestepped the constitutional issue.

[33] For an analysis of the financial results of the use of excess condemnation in connection with the so-called "Kingsway Improvement" in London, see report presented December 15, 1936, to the London County Council by its highway committee as published in *The American City* for June 1937, p. 92.

[34] Bassett, *op. cit.*

The famous Avenue de l'Opera in Paris is an instance of the practice in France. The improvement cost the city $10,800,000. The recoupment amounted to $60,000,000.[35]

Prior to the advent of State constitutional amendments permitting excess condemnation, a number of statutes authorizing the procedure were passed but were either struck out by the courts or were not used because of their doubtful constitutionality. These included statutes in Massachusetts (1904),[36] Ohio (1904),[37] Virginia (1905),[38] Pennsylvania (1907),[39] Connecticut (1907),[40] Oregon (1913),[41] and Maryland (1908).[42]

The unfortunate history of the foregoing statutes, with their limitations on the nature of the improvements to which they are applicable and on the amount of land which might be taken, is indicative of the nature of the struggle confronting the proponents of excess condemnation in this country. The strong American tradition of holding private property more sacred than the public interest in it is undoubtedly an important reason for the lack of advancement in this field. However, that the campaign is being continued with some success is evidenced by the increasing number of constitutional amendments effected in the various States. Nine States now have such amendments.[43]

There is wide variation in the provisions of these State constitutional amendments on four chief points:

(*a*) The nature of the improvements to which the procedure is applicable ranges from streets to nearly all public improvements.

(*b*) The amount of land that may be taken ranges from only enough land to form suitable building lots abutting on the improvements to no restriction upon the area that may be expropriated.

(*c*) In Ohio and Wisconsin the State or local governments may exercise the power without further action by the State legislature; in other States, the legislature is permitted to pass general enabling or special acts.

[35] *Excess Condemnation*, by R. E. Cushman (1917), p. 148.

[36] *Acts of Massachusetts*, 1904, ch. 443.

[37] *Laws of Ohio*, 1904, Ann. Stat., ch. 2, p. 775.

[38] *Acts of Virginia*, 1905, ch. 194.

[39] Laws of Pennsylvania, 1907, No. 315, sec. 2 (Declared unconstitutional in *Philadelphia Mutual Ins. Co.* v. *Philadelphia*, 88 Atlantic 904).

[40] Acts of Connecticut, 1907, No. 61.

[41] Laws of Oregon, 1913, ch. 269.

[42] Laws of Maryland, 1908, ch. 166, construed in the case of *Bond* v. *Mayor and Council of Baltimore*, 116 Md. 683.

[43] Massachusetts, art. XXXIX (1911); Ohio, art. XVIII, sec. 10 (1912); Wisconsin, art. XI, sec. 3 (a) (1912); New York, art. I, sec. 7 (1913) and art. XVIII, sec. 8 (1938); Rhode Island, art. XVIII (1916); Michigan, art. XIII, sec. 5 (1928). (See *Emmons* v. *City of Detroit*, 238 N. W. 188 (1931); California, art. I, sec. 14½ (1928); Virginia, sec. 58 of the Constitution of Virginia as amended (1928), and as defined by Acts of Assembly, 1930, ch. 234 (the Virginia Constitution permits the term "public use" to be defined by the General Assembly); Pennsylvania, art. XV, sec. 5 (1933).

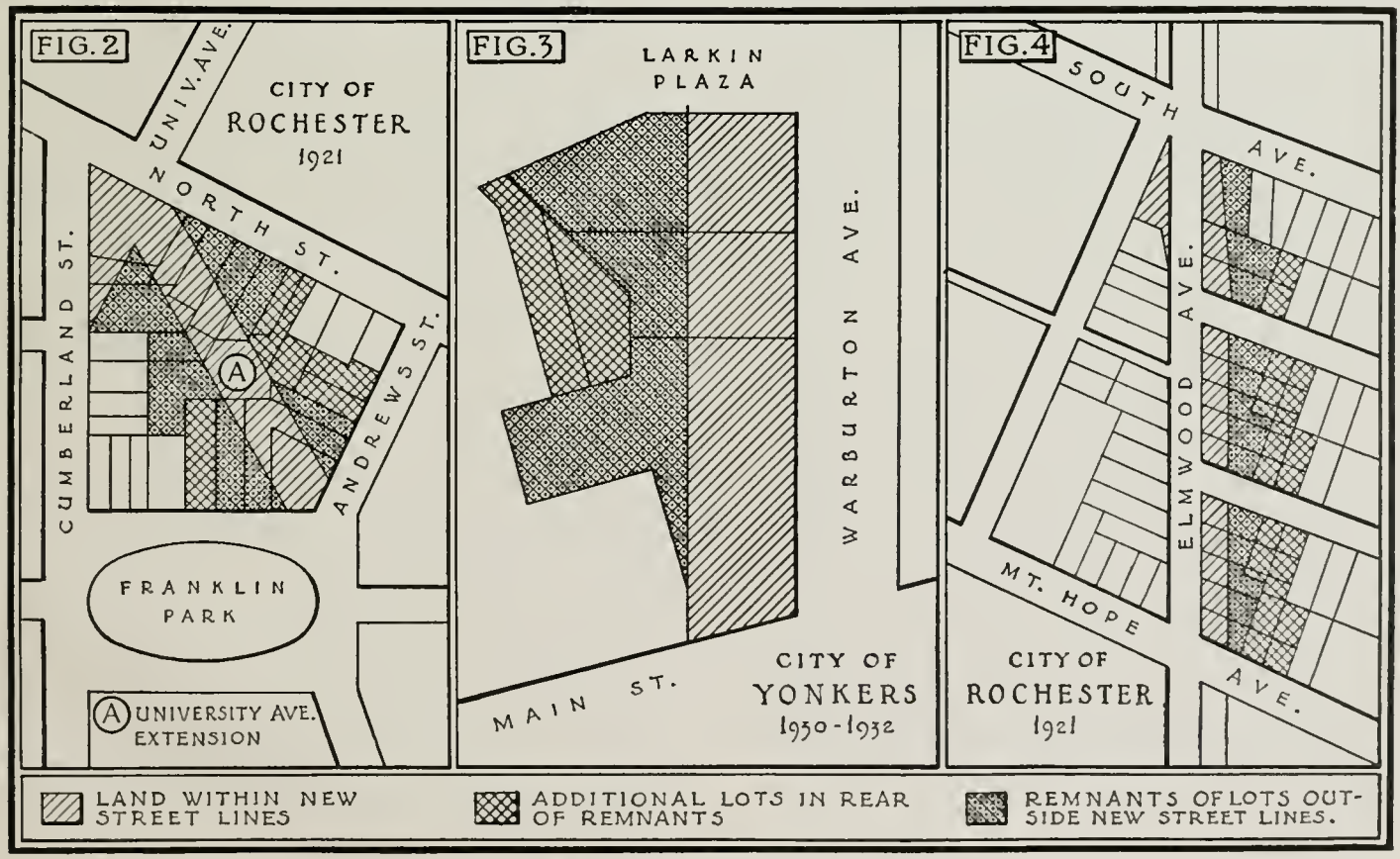



FIGURE 48.—Where excess condemnation might be advantageous

(*d*) The Ohio and Michigan amendments contain the burdensome prohibition that the bonds issued to pay for the incidental or excess land shall not be included in the municipality's indebtedness, but shall constitute a lien only against the property thus acquired.

Whether or not a State constitutional provision permitting excess or incidental condemnation is valid in the light of the provisions of the United States Constitution prohibiting the taking of property without due process of law has yet to be squarely decided by the Supreme Court of the United States. The point was argued before that court in the case of *City of Cincinnati* v. *Vestor* (33 Fed. 2nd 242, 281 U. S. 439, 1929). The Circuit Court of Appeals held the ordinance invalid on the ground that it has not been shown that the excess land was taken for any reason other than recoupment. Financial benefit alone, said the court, is not a public use, and therefore a taking for that purpose is in violation of the fourteenth amendment. The Supreme Court decided the case on other grounds and held that the issue of violation of the due process clause was not presented by the record. In the opinion of proponents of excess or incidental condemnation, the attitude of the court was favorable to it, and we are inclined to agree with their belief that the *Vestor case* presages ultimate victory. In this connection, it will be recalled that the Supreme Court has frequently held that where the legislature and the courts of a State have determined that an undertaking involving the exercise of the power of eminent domain for the protection or enhancement of the public health or welfare or for the public advantage is a proper exercise of the powers of the State, there is no denial of due process of law to the owner whose property is condemned if the means adopted are not futile or have a reasonable relation to the ends sought.

The language of the various amendments and of court decisions indicates that where recoupment is the sole and not an incidental purpose of the procedure, both the legislatures and the courts would be loathe to enact or uphold it. Some writers on the subject are of the same opinion, maintaining that it should be "an instrumentality of good taste rather than good business * * *"[44]

The mere fact that profits were realized as a result of condemnation and incidental to the main purpose of the improvement has been held not to invalidate an enabling law (*Moore* v. *Sanford*, 151 Mass. 285). However, a broad interpretation of public use could sustain the contention that a city is rightfully entitled to appropriate the added value of land resulting from an improvement by it. As Herbert S. Swan has said:

> Recoupment through excess condemnation and the subsequent sale of excess lands at an enhanced value is justified on essentially the same grounds as the tax on unearned increment. The increased value being a growth exclusively due to the enterprise and initiative of the community, it is entirely proper and just that the city, and not the property owners abutting on the improvement, should obtain the benefit. * * * Instead of making a present of this increment to the landowners, the city appropriates it and applies it on the cost of the work, reducing the amount to be collected from the adjacent property owners or from the taxpayers.[45]

It is conceivable that if the reasons in support of this contention are properly made known to the public and the courts, excess or incidental condemnation solely for recoupment purposes will be upheld. Its desirability from the economic point of view has been previously mentioned herein.

Discussing the small extent to which excess condemnation has been used in the United States, the Regional Survey of New York and Its Environs says:

> Excess condemnation has been little used even in the States which have amended their constitutions for the purpose. Many reasons for its lack of popularity may be found, such as that the procedure for its employment in accordance with the statutes passed under the amendments is often faulty; that city attorneys are reluctant to employ new methods; and that the advantages which it affords for regulating city growth have not been fully appreciated.
>
> The greatest obstacle to the progress of this reform, however, is that whereas by ordinary methods the work can be begun virtually without expense and completed largely or wholly from funds collected from neighboring landowners, excess condemnation requires a large immediate outlay. The difficulty is increased by the tax and debt limits, which so closely restrict our cities, and by the deep-seated feeling that it is not wise to permit cities to enter real-estate transactions which require the holding of property for a considerable period of time and its sale in the open market. In some States the amendment requires the community to issue the bonds necessary to raise the funds on the security of the property acquired, forbidding it to assume any liability for the debt. This stipulation has the disadvantage that bonds of this sort are much less marketable than direct obligations of the city or State. It seems evident that only by a growing knowledge of the importance of city planning will these difficulties be overcome.[46]

We recommend the passage of incidental or excess condemnation amendments to the constitutions of the respective States and a revision of the existing amendments which, by reason of the provisions hereinbefore referred to, limit the application of the procedure.

---

[44] *Municipal Administration*, by William B. Munro, pp. 249–259.

[45] "Excess Condemnation," a report prepared for the National Municipal League and contained in a Report of the Committee on Taxation of the City of New York (1915), p. 20.

[46] *Regional Survey of New York and its Environs*, vol. II, p. 226. See also "The Present Status of Excess Condemnation in the United States," a paper presented by Frank B. Williams at the meeting of the city planning division of the American Society of Civil Engineers, New York City, January 2, 1925, pp. 4 and 5.

In this connection, the provisions contained in *A Model State Constitution* prepared by the committee on State Government of the National Municipal League (Revised Edition of 1933 as reprinted in February 1936) are so broad that it is desirable that they be followed. Under section 83 a city is empowered:

(*c*) To make local public improvements and to acquire by condemnation or otherwise, property within its corporate limits necessary for such improvements, and also to acquire an excess over that needed for any such improvement, and to sell or lease such excess property with restrictions, in order to protect and preserve the improvement;

(*d*) To issue and sell bonds on the security, in whole or in part, of any such excess property, or of any public utility owned by the city, or of the revenues thereof, or of both, including in the case of a public utility, if deemed desirable by the city, a franchise stating the terms upon which, in case of foreclosure, the purchaser may operate such utility.

The same provisions are set forth in section 6 of the provisions to be incorporated in State constitutions in connection with "A Model City Charter" prepared for the National Municipal League and revised in 1933.[46a]

We also recommend a complete study of the results of all the cases where incidental or excess condemnation has been used to date in this country.[47]

**Acquisition by Gift and Devise**

In considering municipal land acquisition by way of gift or devise, we must distinguish between those cases where the land is given and accepted without any requirement that it be used for municipal purposes, and those cases where it is given and accepted upon condition that it be used for some municipal purpose.

In the former case, the municipality in receiving, using, or disposing of the property does so in a business or proprietary capacity (as distinguished from its governmental functions). That being so, there are usually no restrictions on the acquisition or disposition of such property. We have previously pointed out that the restriction on municipal land purchase is based on the rule that a city cannot expend its funds for other than municipal purposes. The element of expense is absent in cases of bequest or devise, so that the restriction to acquisition for municipal purposes properly disappears. Therefore, a gift or devise to a city is valid, even though it be granted in general terms and be accepted without any intent to use it directly for municipal purposes. Such land may be sold or leased, to alleviate municipal burdens.

Where, however, the gift or devise is pursuant to a general or special trust to use the property for specified purposes, the city acquires the land in its capacity as a governmental and not as a business agency. In such cases, the property must be used for municipal purposes, but the courts usually interpret those purposes much more liberally than they do in cases of acquisition by purchase or condemnation. Thus, a municipal corporation may take and hold real property by gift or devise for purposes of a public nature, including charitable uses germane to the objects of the municipality, even though, generally speaking, the object may be one that the municipality could not carry out at public expense, as for instance, to aid a religious society engaged in general charitable or welfare work. Naturally, where property is acquired by a city, in its capacity as a trustee, to use for municipal purposes, its right to dispose of it is restricted by the terms of the gift or bequest and by statutory or charter provisions governing the disposition of city property.

The recommendations in this report relating to the desirability of broad statutory and charter provisions covering the municipal acquisition of land by purchase also apply to acquisition by gift and devise. Cities should be virtually unrestricted in their right to accept gifts or devises of real property, irrespective of whether or not property is given unconditionally or for a specified purpose.

**Utilization of Municipal Land**

Once having acquired land for a specific purpose, municipalities are sometimes restricted to its use for that purpose. This is especially true as to property acquired in eminent domain proceedings, because the legislation or the resolution authorizing the condem-

---

[46a] In a further revision of this Model City Charter, to be published in 1940, it is understood that the recommendation quoted above will be unchanged. See also new provisions of the New York State Constitution, footnote 47.

[47] References: Swan, Herbert S., "Excess Condemnation," prepared for the National Municipal League and contained in a report of the Committee on Taxation of the City of New York (1915); Cushman, R. E., *Excess Condemnation* (1917); Williams, Frank B., *The Law of City Planning and Zoning* (1922); Purdy, Lawson, "Why We Need Excess Condemnation," *National Municipal Review* (July 1923); Williams, Frank B., "The Present Status of Excess Condemnation in the United States," a paper presented at the meeting of the City Planning Division of the American Society of Civil Engineers, New York City (January 22, 1925); Vedder, A. L., "The Use of Excess Condemnation in the Opening, Widening, and Extension of Streets," a paper presented at the meeting of the City Planning Division of the American Society of Civil Engineers, New York City (January 22, 1925); Bender, W. H., "Excess Condemnation in Wisconsin," *Marquette Law Review*, vol. 13, pp. 69–75 (February 1929); *Regional Survey of New York and its Environs*, vol. II, pp. 222–226 (1929); Bernard, W. C., "Excess Condemnation," *Proceedings of American Society for Municipal Improvements*, vol. 35, pp. 363–366 (1929); "Michigan and California Can Now Build Finer Cities by 'Marginal Eminent Domain'," *American City*, vol. 40, No. 2, pp. 116–117 (February 1929); Bassett, Howard M., "Some Problems in Excess Condemnation," *City Planning*, vol. 9, pp. 114–120 (July 1933); Munro, W. B., *Municipal Administration*, pp. 249–259 (1934); Eggar, Rowland, "Excess Condemnation," *Virginia Municipal Review* (December 1934 and January 1935); Walker, Mabel L., and others, *Urban Blight and Slums*, pp. 333–345, Harvard University Press, 1938; Phillips, J. C., "Excess Condemnation in the Execution of City, County, Township, and Regional Plans," a paper presented before the Philadelphia Tri-State Planning Conference (April 16–17, 1936).

Since the foregoing was written, New York State has amended its Constitution so that the State, municipalities, and public corporations may be given broad powers of excess condemnation in connection with the construction of public low-rent housing projects or the clearance, replanning, and reconstruction of substandard areas. This constitutional provision is incorporated in sec. 126 of the Public Housing Law of that State.

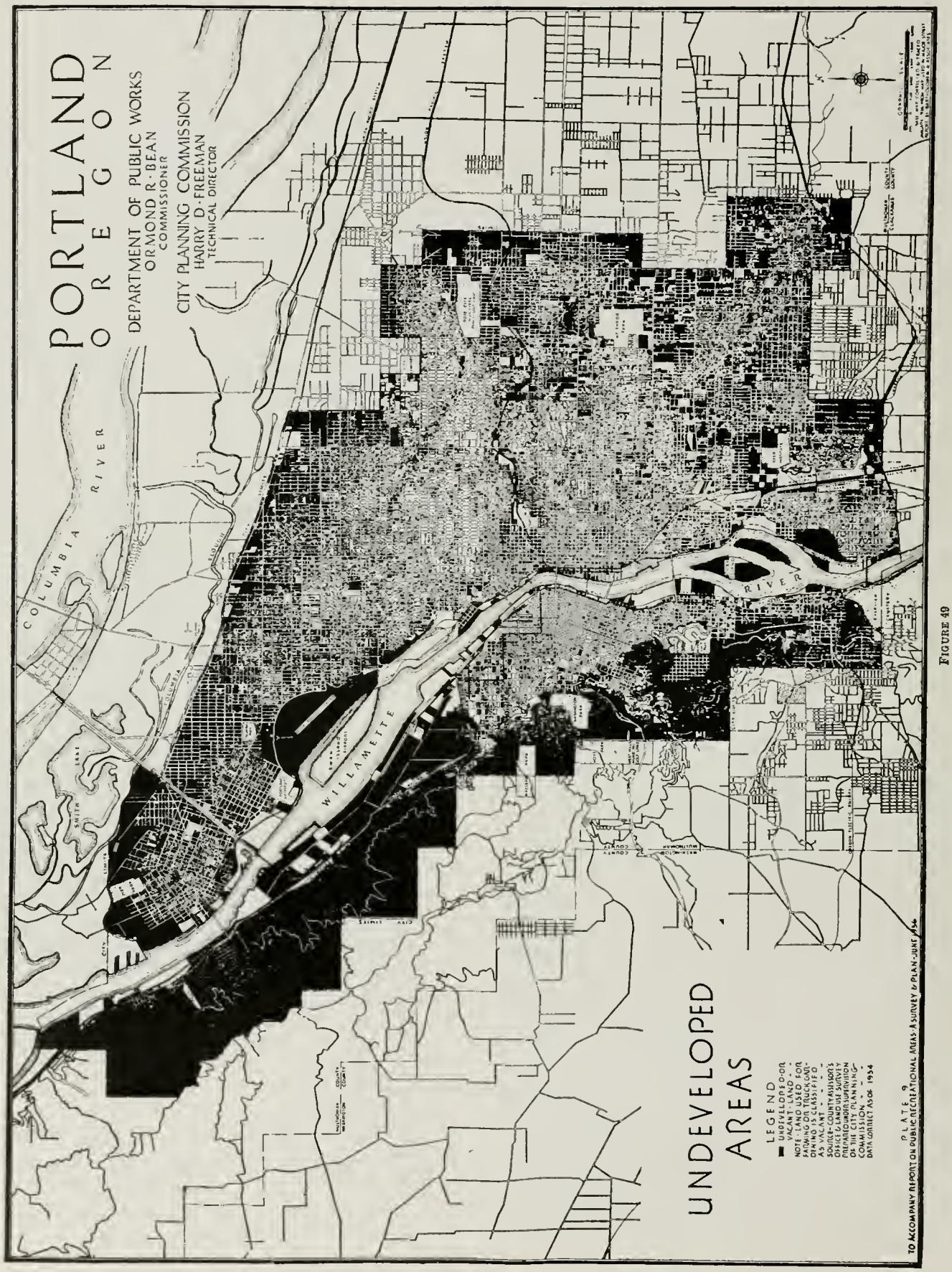

PORTLAND
OREGON
DEPARTMENT OF PUBLIC WORKS
ORMOND R. BEAN
COMMISSIONER
CITY PLANNING COMMISSION
HARRY D. FREEMAN
TECHNICAL DIRECTOR
COLUMBIA RIVER
WILLAMETTE
RIVER
UNDEVELOPED AREAS
LEGEND
UNDEVELOPED-OR VACANT LAND - NOTE: LAND USED FOR FARMING OR TRUCK GARDENING IS CLASSIFIED AS VACANT - - -
SOURCE-COUNTY ASSESSOR'S DOUGLAS LAND SURVEY
PREPARED UNDER SUPERVISION OF THE CITY PLANNING COMMISSION - - -
DATA COLLECTED ASOF 1934
PLATE 9
TO ACCOMPANY REPORT ON PUBLIC RECREATIONAL AREAS-A SURVEY BY PLAN-JUNE 1936

FIGURE 49

nation invariably designates a specific use for the land. This limitation has been avoided successfully in some cities in the following manner: After the condemnation award has been made and at or about the time the property owner is to receive his check, he is asked by the city officials to execute a deed covering his property. He usually has no objection to doing so, and the deed, being in general terms, usually permits the city to use the land for any municipal purpose. This technique is not always available, because of the wording of charter provisions or of court decisions.

Frequently, the city acquires land by condemnation or purchase for a special purpose and then is unable or does not desire to so use it. In some of these instances legal restrictions prevent its use for other municipal purposes. This is especially true of land acquired for governmental purposes, such as parks, schools, public buildings, and streets. Even though its transfer to some proprietary or business purpose of the municipality would obviously be desirable, it cannot ordinarily so used without special legislation in each case. Sometimes, because of political or other considerations, such legislation is not obtainable or is only obtained after a great deal of trouble, expense, and delay.

Where a city purchases land for municipal purposes, it may continue to hold it after it is no longer necessary for such purposes.

We recommend that legal restrictions on the use of land properly acquired for public purposes be diminished and that, insofar as it is practicable to do so, municipalities be given the same freedom as private real-estate investors have with respect to the use of their property, subject, of course, to the limitation that the use be a public one.

Occasionally, a peculiar situation has arisen with results adverse to the public interest. A municipality has acquired land for a proprietary purpose, paid the award, and then failed to use the property. Many years later, when it wanted to use it, it has found that some individual has obtained title to it by adverse possession for a period of 20 years or more. The city is then forced to condemn and pay for the property a second time. Ordinarily, this could not happen to property held by a city for a governmental purpose. Cities should have proper statutory protection against loss by adverse possession of property held in a proprietary capacity.

#### Sale, Lease, or Other Disposal of Public Land

Municipal property acquired or used for governmental purposes may not be disposed of in any manner whatsoever (be it by sale, lease, mortgage, exchange, etc.) without express legislative authorization or unless the land is no longer needed for public purposes. No restriction applies to land acquired for the city's private or proprietary purposes or to land bought for, but not yet dedicated to, governmental purposes. However, a city may never dispose of any of its real property by making a gift thereof. The disposal must always be made in good faith and for an adequate consideration.

> In the actual sale of city land, two methods have been most popularly used. The common mode of disposal is by bids and auctions. It has the advantage of simplicity and the capacity largely to remove fraud and collusion; the primary disadvantage is that it works well only with sites of low value. The other method is private contract with the purchaser. Such a means is open to obvious abuse, the likelihood of such abuse, of course, being inverse to the quality and caliber of the city council. Nevertheless, it is the only feasible method of land disposal, where large sums of money are involved, for the auction method fails to insure a proper and adequate compensation.[48]

Usually, cities are empowered to lease land held in a private capacity, although the courts frown upon long-term leases and low rentals. So also, a city may exchange or mortgage its privately held, but not its public property, though these rights are often limited by statutory and charter provisions.

Generally speaking, the right of municipalities to sell, lease, exchange, or otherwise dispose of property held in a proprietary capacity is entangled in a maze of constitutional, statutory, and charter provisions. In the interest of facilitating more enlightened municipal land policies, these restrictions should be simplified as far as possible.

#### Permanent Municipal Ownership of Tax-Foreclosed Properties

In most States, statutes require a city to dispose of property acquired in tax-delinquent proceedings, instead of permitting its retention, unless needed for an immediate public purposes. The trend of present-day thinking is rightly in the opposite direction. By bringing all such available properties into public ownership as speedily as possible, a municipal land reserve will gradually be built up which can be utilized for specific public purposes as the need arises. Some experts advocate that no property so acquired should ever be sold, but should be held by the city and leased by it at rentals to be determined periodically. We are inclined to believe it inadvisable to restrict the power of a city to sell, although we believe that the suggested principle might well be widely adopted as a matter of administrative policy.

We recommend that existing statutory and charter provisions be amended so that, subject to the advice or control of its planning agency, a city may hold,

[48] *Some Economic Aspects of Municipal Land Policies of American Cities*, George Joseph Stigler (1932), p. 75.

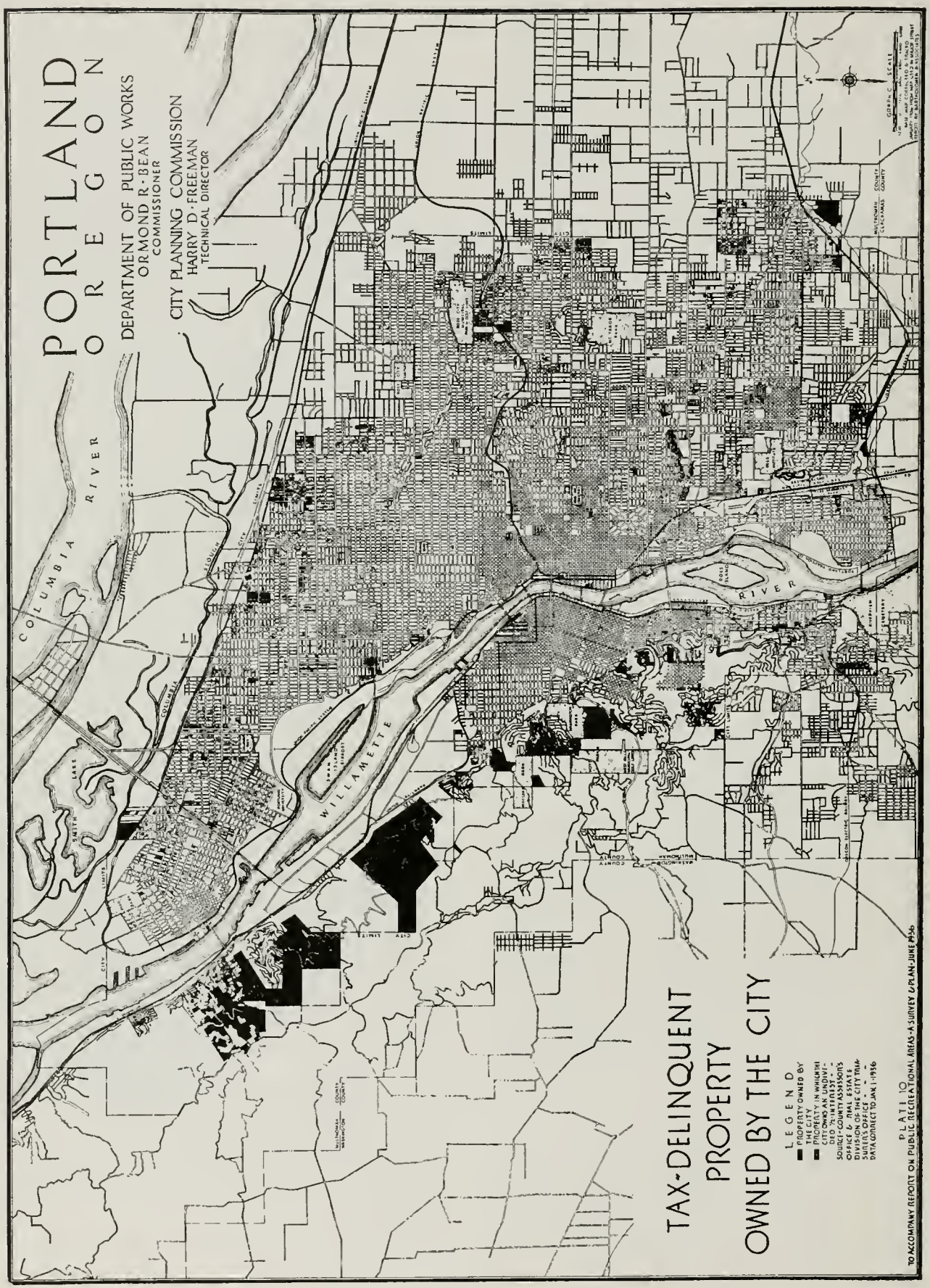

PORTLAND
OREGON
DEPARTMENT OF PUBLIC WORKS
ORMOND R. BEAN
COMMISSIONER
CITY PLANNING COMMISSION
HARRY D. FREEMAN
TECHNICAL DIRECTOR
COLUMBIA RIVER
WILLAMETTE RIVER
TAX-DELINQUENT PROPERTY OWNED BY THE CITY
LEGEND
PROPERTY OWNED BY THE CITY
PROPERTY IN WHICH THE CITY HAS AN UNDIVIDED 2% INTEREST
SOURCE: COUNTY ASSESSORS OFFICE & REAL ESTATE DIVISION OF THE CITY TRUSTEES OFFICE
DATA CORRECT TO JAN. 1-1956
PLATE 10
TO ACCOMPANY REPORT ON PUBLIC RECREATIONAL AREAS - A SURVEY & PLAN - JUNE 1956

FIGURE 50

use, lease, or sell any property acquired by it in tax-delinquency proceedings.[48a]

## Legal and Economic Aspects of Land Titles

### Title Examination and Title Insurance

Three systems of title examination in vogue in this country require no lengthy description. The work is usually done:

(*a*) by an attorney who searches the records, prepares an abstract, and renders an opinion on the title, or

(*b*) by an abstract company which makes an abstract and delivers it to the attorney, who renders an opinion on the title, based on his examination of the abstract, or

(*c*) by a title insurance company which examines the title and usually insures the lien or the title.

The Torrens system of title registration and insurance will be discussed later.

The cost of title examination and insurance is an important element in delaying the free transfer of real property. This is especially true in the case of home ownership, not only when the home owner purchases his property but also when he desires to obtain a mortgage loan or an extension or renewal thereof. From the point of view of large mortgage lenders, the legal expense of placing a loan is of great importance. Although the fee for searching and insuring a title for the first time is no doubt justified, the requirement for the payment of the same or a slightly lower reissue fee in each title or mortgage transaction thereafter cannot be justified on any sound social or economic basis. It constitutes a tremendous financial burden running into hundreds of millions of dollars annually in the United States.

The security afforded by the different systems is next in importance. Where the title search is made by an attorney, the owner who is a victim of a negligent searcher or of poor legal advice has little chance of collecting any damage he may suffer thereby. Abstract companies are often in a sounder financial position and have longer lives than attorneys, so that claims against them for negligence are sometimes collectable. Neither attorneys nor abstract companies guarantee the validity of titles they undertake to search. The title-insurance companies usually meet their obligations under their policies in the same manner as other types of insurance companies. The collapse of a large number of title-insurance companies during the depression was due to their mortgage financing and their banking activities. The title-insurance part of their business was usually sound and profitable. That such companies should be confined by law to title-insurance matters and to no others is the lesson that has been learned at the expense of many a personal tragedy.

Under our present recording system, a title search must necessarily be made every time there is a transaction involving a specific piece of property. In earlier years, the work was, and in many parts of the country today still is, entirely in the hands of lawyers skilled in conveyancing. They or their clerks usually prepared abstracts containing all the important matter in the instruments recorded affecting the title to the property, so that the lawyer could then give his attention to the legal significance of the facts discovered. The next time the property changed hands, it would probably be another lawyer who handled the title search, so that the work would have to be repeated. In time, abstracting companies took over a considerable portion of the business in some sections of the country.

In the hands of the abstracting companies, much duplication of work is avoided. Since the abstract contains the pertinent facts shown by the records, it need only be brought up to date when a new transfer or mortgage is contemplated. The abstracting company, under its contracts with those who employ it, is under an obligation to uncover every material fact affecting the title to the property being searched or to state what fields, if any, it has not covered, so that the attorney employing it may be fully and correctly advised of the situation.

The title-insurance system has made considerable headway in many sections of the United States, especially in the urban areas. The title companies have built up great "plants" consisting of records, abstracts, indices, and maps. Their policies guarantee the holder against losses due to defects of title, subject to any exception which may be specified. The lack of certainty in title under the title-search and abstracting systems has made the title-insurance policy a practical necessity, where the Torrens system of registering titles has not been adopted.

The work of governmental agencies and large institutions in acquiring land or dealing with liens thereon would be simplified if, in each State, there were adopted a uniform title-insurance policy, an approved form of abstractor's certificate, and a uniform attorney's opinion of title.[49]

---

[48a] Recent publications relating to this subject include: "Land Reserves for American Cities," Philip H. Cornick and Harold S. Buttenheim, *Journal of Land and Public Utility Economics*, August 1938; five papers on "Tax Foreclosed Land and Tax-Delinquent Properties," in *Municipal Problems 1939*, Proceedings of the Conference of Mayors and Other Municipal Officials of the State of New York; *Tax-Delinquent Land in California*, California State Planning Board, 1939.

[49] For a study of methods and problems of land-title assurance, see Gage, Daniel D., "*Land Title Assuring Agencies*," San Francisco, Recorder Printing & Publishing Co. (1937).

See also Barclay, R. P., "*Title Experience of Home Owners' Loan Corporation*," Washington, D. C. (1936).

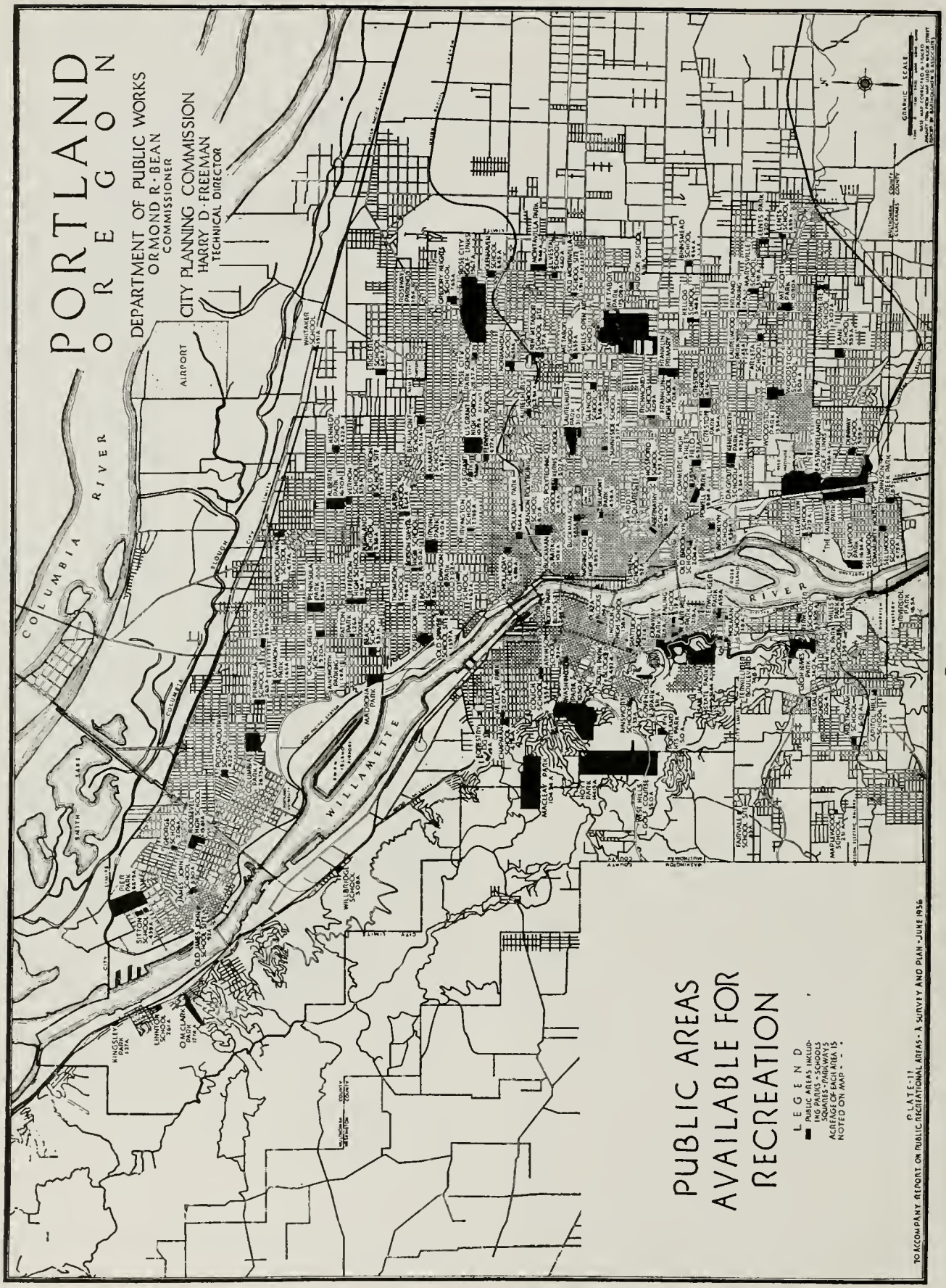

PORTLAND
OREGON
DEPARTMENT OF PUBLIC WORKS
ORMOND R. BEAN
COMMISSIONER
CITY PLANNING COMMISSION
HARRY D. FREEMAN
TECHNICAL DIRECTOR
COLUMBIA RIVER
WILLAMETTE RIVER
AIRPORT
PUBLIC AREAS AVAILABLE FOR RECREATION
LEGEND
PUBLIC AREAS INCLUDING PARKS - SCHOOLS SQUARES - PARKWAYS ACREAGE OF EACH AREA IS NOTED ON MAP
PLATE - 11
TO ACCOMPANY REPORT ON PUBLIC RECREATIONAL AREAS - A SURVEY AND PLAN - JUNE 1936

FIGURE 51

**The Torrens System**

The Torrens system of land-title registration was originated by Sir Robert Torrens in South Australia and there enacted into law in 1858. The basic principle of the system is the registration of *title* to the land, instead of registering only the *evidences* of such title.

The chief characteristics of the system are:

1. The creation of truly indefeasible titles warranted and guaranteed by the State;
2. The provision for special proceedings by which the validity of the title is established and a governmental certificate issued attesting that fact;
3. The transfer of title to registered land by entry in the registration to the exclusion of all other methods; and
4. The creation of an indemnity fund to compensate those who may suffer damages by the operation of this system.

Under our present title-insurance system, a purchaser who is later deprived of the property because of a defect in title is reimbursed by the title company. Under the Torrens system, the purchaser cannot be deprived of his property once it is registered, but any person who has been improperly deprived of an interest in the land by reason of the regulation may be reimbursed out of the fund created under the statute.

The Torrens system has been adopted in a number of foreign countries and, at present, is a permissive method of dealing with land titles in 17 States of the United States and in Hawaii and the Philippine Islands. In none of our States is it mandatory.

In 1916, the Conference of Commissioners on Uniform State Laws approved of the Uniform Land Registration Act. Three States adopted it, one of them with modifications. However, in 1934, the conference declared the act obsolete and withdrew its recommendation. Nevertheless, the general plan of registration formulated by Torrens, but modified and amended to meet constitutional objections and local conditions, is the system in use in those States which have adopted registration of land titles; and the several State statutes are usually referred to as "the so-called Torrens law." In California, Illinois, and Massachusetts, the statutes were enacted in the late 1890's; in New York, in 1908; so that it may be said, in general, that some of the States which have enacted laws providing for the Torrens system of land-title registration have had 30 to 40 years of experience with it. There are now a sufficient number of adjudications by the State courts and the United States Supreme Court to settle fairly definitely the important questions that have been raised as to the validity of the statutes and the effect of the main provisions of the system.

In Illinois, the statute is State-wide, but it has never been applied outside of Cook County (city of Chicago). In the year 1926, there were recorded 104,645 deeds against 17,173 registered under the Torrens system, 108,888 mortgages recorded as against 14,835 mortgages registered; in 1933, there were a total of 55,330 mortgages recorded and there were only 10,338 registered. In Massachusetts up to November 1934, only 15,731 titles had been registered in the whole State. In New York up to 1928, there had been less than 400 registrations.

The procedure under the New York statute, which for the purpose of our discussion may be accepted as a general exposition of the provisions of the system as it exists in all the other States which have adopted it, has been described as follows:

> The statute provides for the filing of a petition; for a reference to an official examiner who is to make a preliminary report as to the title and as to any interest therein; and for a hearing thereafter at which adverse claimants shall have an opportunity to assert their rights. Notice of this hearing is to be given by publication in a newspaper, and by registered letter, demanding a return, to every party to the proceeding whose address is known, and so far as possible to all other persons appearing to have any interest therein as well as to adjoining owners. Notice of the proceeding is also to be posted in a conspicuous place on the land. The final order when duly enrolled is to be "forever binding and conclusive upon the State of New York and all persons in the world, whether mentioned and served with the summons and said notice specifically by name or included in the description, all other persons, if any, having any right or interest in or lien upon, the property affected by this action or any part thereof." [50]

The petition is addressed to the supreme court, although it is to be filed with the registrar or other designated county official of the county wherein the land is situated; and the relief prayed for is a judgment of the court that title to the real property described be duly registered and vested in the petitioner in fee simple absolute, free and clear of all liens and incumbrances except as may be set forth in the petition; and that the registrar be directed to register the said title accordingly and to issue to the petitioner a certificate of title as provided by law.

Under the statute, it is the duty of the court, before rendering a judgment entitling the owner to have his title to the property registered, to examine most carefully into the matter; and if the court finds that the petitioner has not good title to the property, it is equally his duty to dismiss the complaint and deny registration, since the law provides that the judgment when entered is to be deemed conclusive unless reversed upon an appeal taken within 30 days, and not to be set aside except in an action alleging fraud on the part of the registrant, which action may be brought within 10 years. As to the quality of title in the petitioner

[50] From the opinion of Judge Cardozo in *City of New York* v. *Wright*, 243 N. Y. 80.

which the court will admit to registration, the court, in *Meighan* v. *Rohe*, 151 N. Y. S. 785, 786, said:

> It is well settled that the purpose of the act is to register good titles and not to cure bad ones. * * * A good title which may be registered, we understand to be one which is marketable and free from reasonable doubt, or, in other words, such a title as a court of equity would compel an unwilling purchaser to accept in an action for specific performance.

If the court grants the petition, the registrar, upon proper application to him, opens a page in the register for the particular piece of property, which becomes the original certificate of title, and issues a certified copy of it to the owner. Thereafter, every transaction involving the property or affecting it must be recorded on the register and on that particular certificate, as though it were a page in a ledger headed with the name or title of a certain account. If the owner of the property wishes to sell it, he executes a deed in the usual way and delivers it with the duplicate certificate of title to the purchaser who takes both to the registrar. This official files the deed, cancels the old certificate of title, and issues a new duplicate certificate to the purchaser. In a similar way is a mortgage registered; and so with all instruments which act as liens against the property. While it is still necessary, under the systems which prevail today in the States which have adopted the Torrens plan, to search other records than the register of title to land for such charges against the property as unpaid taxes (municipal, State, and Federal), assessments, building-law violations, bankruptcy proceedings, etc., there would seem to be no reason, either in principle or in practice, why all this pertinent data could not be brought to the register in the same manner as all debits and credits, no matter how or where they arise, affecting one person or activity are brought together under one account in the ledger of the books kept by any business enterprise.

After the courts had held the law to be valid, the opponents of the plan then turned their guns on the claim of its practicability, its economy and efficiency. They point to the fact that, though it has been on the statute books of a number of States for many years, its use has been insignificant in comparison with the old system of recording. We doubt that the plan has been given a fair chance. It has been merely permissive, and has been compelled to face the antagonism of powerful forces in the field of finance who, in some instances, apparently believe they have acquired vested interests in the recording system through the large "plants" which they have established for the searching and guaranteeing of titles.

To give the Torrens system the scope to which we believe it is entitled in order to be effective, the following things, it seems to us, are necessary:

(*a*) A revision of the fundamental law of real property so as to remedy a number of the defects and anachronisms which even those who so strongly favor the present system of recording admit stand badly in need of correction.

(*b*) The enactment of a law making registration of land titles under the Torrens system (revised, where necessary) compulsory whenever property changes hands hereafter. This will result, necessarily, in having both the recording system and the Torrens system simultaneously in operation for many years. In the course of time, the former will be entirely eliminated.[51]

(*c*) The amendment of the present land title registration laws so as to provide a *State* assurance fund instead of, as at present, the several county assurance funds. This may require State constitutional amendments in some States.

(*d*) A survey of the work of the registrar's offices and the installation of the most modern mechanical methods for the handling of work of land title registration, so as to take advantage of the methods and devices employed by the large corporations of the country.

Some of the enthusiastic advocates of the Torrens system, stressing the defects in the recording system which they desire to supplant, have asserted that the Torrens system will accomplish needed reforms without affecting the fundamental law of real property. In our opinion, there are a number of things in the fundamental law which need to be changed, not for the purpose of making the Torrens plan effective, but because such changes are highly desirable, as even the apologists for the present cumbersome system, in their arguments against the Torrens plan, freely admit. We believe that a commission appointed to make a comprehensive study of the land title registration law in conjunction with the law of real property, following the procedure recently used in reforming the law of descent and distribution in New York, will be able to harmonize the law of tenure of real property with the registration of titles; and, if in the process some of the deadwood in the field of real property should be gotten rid of, as dower and curtesy were disposed of in some States in the reform of the law of decedent's estates, so much the better.

We are of the opinion that, with some improvements which can easily be made in the Torrens system statutes as they appear on the books today, together with the correction of obvious defects in the fundamental

[51] Percy Bordwell (writing in the *Encyclopedia of the Social Sciences* under the subject of land transfers) points out that registry of title leaves no place for prescription or the healing effect of time; that the record is the important element and investors should not have to look beyond it; that the initial proceeding means in many instances an action to quiet title and often exposes defects in title which ordinarily time would heal. These criticisms might be serious obstacles to the adoption of the compulsory and exclusive system, if the law required that proceedings be instituted to register every plot of land in the State at one time. That, however, is not necessary. The system could and should be introduced gradually. Where, in a particular proceeding, the court would have to deny registration because of defects incurable at the time, that land would have to remain out of the system until such time as the defects have been cured.

law of real property, the system can and should be made to work efficiently; and when so perfected, it should produce most salutary results. After the first expenses of the initial registration of title, the costs involved in registering subsequent transactions will be much lower than the present costs for searches and title-guarantee policies; the opportunities for fraud and forgery will be greatly lessened; and, in general, a far more scientific system in keeping with the spirit of the times will take the place of a cumbersome, medieval, and uneconomic system of land transfers. The work necessary in preparing for transfer of title and mortgaging of real property will be immeasurably lessened, dealings in real estate greatly facilitated, and real property made a much more liquid asset. True it is that in the operation of the system the burden will be shifted to the persons desiring to record their liens and to all wishing to take advantage of the constructive notice which proper registry will afford them. The adoption of the system contemplates, however, no changes which are not in full harmony with the spirit of our law, the rights of private property, and the protection of innocent investors. It contemplates the elimination of careless and bungling conveyancing and recording, the insecurity of the abstract-

held by many to be the most direct and certain in practice;[53]

**Mortgage Foreclosure**

In mortgage transactions, the problem that has faced the courts and the legislatures for many years has been how to afford remedies which will enable the lender to be repaid for his loan, as expeditiously as may be practicable, out of the real property given as security and, at the same time, protect the borrower from the hardships and essential injustice of forfeiture of his property and ruinous deficiency judgments, which may be due to wide and apparently uncontrollable fluctuations in the real-estate markets between the time of the making of the mortgage and the maturity of the debt.

The extinguishment of the mortgage and the production of a perfect title are the first purposes of every method of foreclosure.

The principal mortgage foreclosure methods in use in the United States are as follows:

(*a*) By entry and possession, now mainly confined to New England and a few of the Southern States;

(*b*) Strict foreclosure or foreclosure without sale, a method generally allowed only in exceptional cases owing to its severity upon the rights of the owner of the equity of redemption;

(*c*) Statutory foreclosure, sometimes called foreclosure by advertisement, or foreclosure under power of sale. This method is permitted by statute in many States. Each step in the proceeding is specifically prescribed in the statute. Though economical and expeditious, the procedure is extremely technical and the remedy afforded open insufficient. Hence, it is seldom employed where an equitable action is allowed. In general, the disadvantage usually encountered in statutory foreclosure is its inconclusiveness as compared to the finality of foreclosure by an action in equity.

(*d*) A bill in equity, now the almost universal procedure, held by many to be the most direct and certain in practice;[53]

Bound up with the diversity of foreclosure procedures in the several States is the diversity of methods relative to the enforcement of the other remedies available to the mortgagee after the mortgagor's default. Usually, the mortgagee may have an action at law to recover the debt, i. e., an action on the bond or note secured by the mortgage or an action in the nature of ejection to obtain possession of the property. Unless restricted by statute, he may pursue all his remedies concurrently or successively. However, by statute in many States, foreclosure by an action in equity is the only method by which a mortgage debt can be collected. Under such statutes, provision is made for deficiency judgments in the equitable action.

While a bill in equity (or, as it is sometimes called, an equitable action or, simply, an action to foreclose a mortgage) for the foreclosure and sale of the property is the prevailing method in use today, in some States this procedure is controlled by statute, while in others it is left completely to the inherent and general jurisdiction of courts of equity. Anyone who examines the statutes on the subject in the several States must be struck at once by the great diversity of systems in use and by the difference in detail among those which are based upon the same general principles. An analysis of the methods of mortgage foreclosure in use today discloses that in 28 States the procedure is by action in court; unregulated power of sale is in use in 10 States; regulated power of sale is employed in 5 States;

---

[52] References:

Niblack, W. C., *An Analysis of the Torrens System, Chicago* (1912).

U. S. Fed. Farm Loan Bureau, *Land Title Registration by Certificate.* Government Printing Office, Washington, D. C. (1918), 86 pp.

Report of the Committee on the Torrens System contained in *Yearbook of Conference of Commissioners on Uniform State Laws* (1914).

U. S. W. P. A. Project 65-97-352 (1936). *Survey of Real Estate Laws,* a valuable piece of research in the subject being conducted by a group of attorneys under the supervision of Walter Fairchild, Esq., a former special deputy registrar of New York County.

Bordwell, Percy, "Land Transfers," *Encyclopedia of the Social Sciences.*

Holland, James M., *Tenures and Titles,* New York (1936).

Du Page Torrens Title League, *Torrens for Security and Economy,* Hinsdale, Ill.

Barker, Wendell P., *The Torrens Law—An Argument For It,* New York State Mortgage Commission (1937).

For arguments in opposition to the Torrens system, see Finck, John L., *The Torrens Fallacy,* published by Home Title Guaranty Co., Brooklyn, N. Y. (1936). A reply thereto is *The Devil Was Sick* by Walter Fairchild, published by the Torrens Title League of New York. Other opposition arguments are contained in *Memorandum upon the System of Registering Titles to Real Property, Commonly Known as Title Registration Acts or "Torrens System" in New York and Some Other States,* by George L. Allin, New York City (1935).

[53] The bill in equity, says Wiltsie, affords "the largest opportunities for the adjustment and enforcement of the rights of all parties interested, is the quickest in final results, produces the firmest and strongest titles, and does the greatest justice to both mortgagor and mortgagee." Wiltsie, *Mortgage Foreclosures,* fourth edition, p. 29 *et seq.*

and in the remaining States various other methods are followed. Thirty-one States provide a redemption period ranging from 4 months to 2 years. Although in the remaining 17 States no right of redemption is given the mortgagor, in 8 of these foreclosure is by action in court, a procedure which requires months to complete. Exclusive of the period allowed for the exercise of the right of redemption where such right exists, the length of time ordinarily elapsing between the commencement of the action or proceeding (whatever its form may be) and its conclusion in the foreclosure sale varies in the several States from about 2 months to 13 months. The average is 4 to 6 months, in cases where there is no contest and jurisdiction over the mortgagor is easily obtainable.[54]

As to deficiency judgments, 10 jurisdictions require a separate action to be brought for the purpose, 14 permit recovery in the foreclosure action without qualification, and in 1, no such judgment is obtainable at all. In the remaining States, a variety of conditions prevail. Some require a separate action if the property is sold under a power, otherwise no separate action is necessary; some do not require a separate action but limit recovery to the difference between the sale price and the reasonable value of the property; some do not permit a deficiency judgment on a purchase-money mortgage; others permit a variety of conditions to govern the situation.

A survey indicates that the range in court costs in these proceedings is from $20 in Alabama to from $240 to $300 in New York. The attorneys' fees in foreclosures involving small homes are from $25 to $50 in some States to from $50 to $150 or more in others. No data are available on attorneys' fees in proceedings involving more substantial mortgages.

A subject for further study is a comparison of foreclosure techniques in terms of "urban" versus "rural" States. For example, Illinois, which may be considered an urban State, has one of the stiffest foreclosure statutes in the country—that is, long and costly proceedings are involved. Whether or not that is generally true of urban States and whether or not urban legislatures protect the home owner more than rural States or vice versa, or are indeterminate is still to be probed.

Foreclosure practice is a serious economic problem in times of prosperity as well as of depression. Under a simpler order of society, affairs worked themselves out under the usual local procedures without very widespread disruption of financial and credit security. A century or so ago, borrowers and lenders operated largely as individuals, and the mortgagor and mortgagee in a real-estate transaction in Georgia were not concerned particularly with conditions existing in the field of real-estate finance in Wisconsin or Massachusetts. State laws as to mortgage foreclosures were molded to meet local conditions. Today, banks, insurance companies, mortgage companies, and other institutions do business in many States. The perplexity, uncertainty, confusion, and waste resulting from widely varying laws and the interpretation of them in the several States hinder mortgage credit transactions, tending to limit interstate dealings in mortgage securities. The increased risks and expenses of the large financial institutions operating on a national basis bear heavily upon the price of mortgage money, the price of junior mortgage financing, and the values of equities of redemption.

It has long been recognized that a simpler method of foreclosure than the ones generally used in the States today would be most desirable. It should avoid the costly and cumbersome features which now make for delay and useless expense; it should avoid possible uncertainty in the title, afford the mortgagee an efficient remedy against the borrower and the security, and satisfy the mortgagor's need for reasonable notice of sale so that he may have full and fair opportunity to protect his equity in the property and escape, if possible, an unwarranted or excessive deficiency judgment.

To a large extent under the pressure of the large financial interests engaged in interstate business and for the purpose of supplying the need for foreclosure reform, the National Conference of Commissioners on Uniform State Laws at its meeting in Buffalo, N. Y., in 1927 approved the draft of a Uniform Real Estate Mortgage Act, which it had had under consideration for several years, and recommended it for enactment in all the States. While the draft has been approved by the American Bar Association, the National Association of Real Estate Boards, the American Title Association, and other organizations and by leading practitioners and scholars in the field, it has not been adopted to date by the legislature of any State, although some of the States have incorporated some of its important features into their mortgage and foreclosure acts. The following quotation from the introductory statement by the committee which prepared the draft of the act sets forth its scope:

> The act furnishes a statutory short-form mortgage that will, by the use of some 160 words in the short form, supply the place of and be equivalent to one containing about 1,000 words with all covenants in use * * *.
>
> It makes the mortgage a lien upon, instead of an estate in, the premises, leaving the right of possession in the mortgagor until foreclosure is complete * * *.

[54] The data contained in this and the two succeeding paragraphs in the text are based on a chart dated September 1935, prepared by the Legal Division of the Federal Housing Administration and on miscellaneous findings of a number of Federal agencies.

It provides a simple, inexpensive, and efficient method of foreclosure without resorting to the courts, with ample protection to subsequent lienholders, which leaves the title clear, definite, and unclouded. The method is "foreclosure by power of sale." It is in addition to foreclosure in court; and its use is optional * * *. It consists of foreclosure by power of sale so regulated as to prevent oppressive use of a substantial period of redemption. It requires notice of sale to be given by mail to interested parties, but not so as to affect the validity of the title. In case there is a dispute about the mortgage, injunction may be easily secured and foreclosure must then be in court * * *. Statutory attorney's fees are provided * * *.

This method relieves courts and court records of foreclosure proceedings, and saves public expense. It meets a public demand to remove from courts matters that can be handled more expeditiously and economically in an administrative manner * * *

It provides for a definite substantial period of redemption after foreclosure sale, and for the manner of exercising the right of redemption by both the mortgagor and subsequent lienholders. The period is not fixed and is not intended to be uniform * * *. It may be made anywhere from 10 days to 2 years, according to the usages and requirements of the particular State.

It provides for a State electing, by an alternative section, to apply these redemption features to foreclosure by suits or action in court.

The act provides for the treatment of trust deeds in the same manner as the ordinary mortgage.

It provides a statute of limitations for outlawing mortgages that leaves the title unclouded by the mortgage because of some act or fact outside the record, a feature contained in the laws of only a few States.

That the act has failed of adoption by any State so far is probably due to an almost equal division of opinion within each of the States as to the desirability of a period of redemption after foreclosure and a like division of opinion as to the desirability of the method of foreclosure known as foreclosure under regulated power of sale. While the act drafted by the commissioners has met with a good deal of commendation, it has also encountered some serious criticism.[55] Nevertheless, it marks an important step forward in that it has had and will probably continue to have great influence in the several States in the drafting of legislation looking toward reform of law and procedure in mortgages and their foreclosure, even though the final result be not uniformity throughout the States. There are indications that the act as drafted by the commissioners is not entirely satisfactory to the officials of at least one Federal agency concerned with the problem. The preparation of a new model act by Federal officials is said to be under consideration.[55a]

Formulation of model laws often tends to delay action in States where the need for immediate reform is urgent. Accordingly, it is recommended that the States study their mortgage laws, with a view to making appropriate amendments promptly, and that the

[55] E. N. Durfee and D. W. Doddridge: "Redemption from Foreclosure Sale: The Uniform Mortgage Act," *Michigan Law Review* 23: 825–69 (June 1925).

*Handbook of the National Conference of Commissioners on Uniform State Laws* and *Proceedings of the 37th Annual Meeting at Buffalo, N. Y., August 23 to 29, 1927.* The text of the Uniform Real Estate Mortgage Act preceded by the report of the committee thereon is to be found in this volume.

For comments on the Uniform Real Estate Mortgage Act see: *Journal of Political Economy,* 34: 383–6; *Virginia Law Review,* 12: 674–5; *Colorado Law Review,* 27: 861–9. Also "Limits of Uniformity in State Laws" in *Journal of the American Bar Association.* 13: 633–6. The last contains a serious word of warning by Hon. J. F. Ailshie, a member of the National Commission on Uniform State Law and former chief justice of the Supreme Court of Idaho.

John Bassett Moore, "The Passion for Uniformity", *University of Pennsylvania Law Review,* 62: 525–44.

[55a] Since the foregoing was written, the Central Housing Committee, Washington, D. C., has completed a proposed new model act (1939).

From *The American City* for September 1936

FIGURE 52.—Typical properties taken over by Boston for the nonpayment of taxes

study be made from three points of view: (1) the adoption of an efficient, speedy, and economical procedure; (2) the balancing of the equities between mortgagees and mortgagors generally in such procedure; (3) the facilitation of interstate as well as intrastate mortgage credit transactions.[56]

**Revision of Current Practices in Selling Tax-Delinquent Property**

Tax delinquencies and tax-abandoned vacant property increased to an unparalleled extent during the recent depression years. The preceding land booms and speculation were largely responsible. Land which is not used can yield no current income to the owner; that he should be unable or unwilling to pay taxes therefor is not surprising. In Dearborn, Mich., for instance, 30,000 of the 40,000 platted lots were reported as vacant in 1933. After the boom broke, buyers increasingly stopped paying taxes; 2,800 lots had become delinquent in 1928 and remained so. By 1930, 12,400 were delinquent, and by 1932, this number had risen to 26,600, or two-thirds of the total. Probably half or 15,000 will remain delinquent.[57]

Many tax-delinquent properties are antiquated or run-down buildings often located in slum or blighted districts. Purchased or built when rents are high, such buildings may yield an owner returns on his investment for a while. With a changing market and lowered rents, improvements to very old homes would not yield a proportionate profit. Neglected, they gradually become uninhabitable. They are abandoned by tenants and eventually by their owners. In St. Louis, for instance, tax delinquency in slum areas is about 25 to 40 percent; in blighted districts, 15 to 19 percent; and in higher value residence districts, only 2 to 5 percent.[58] Thus, vacant lots and deteriorated houses form the bulk of tax-delinquent property. They represent investments which, in the eyes of the holders, are considered unworthy of maintenance.

At the end of the fiscal year 1935, the median accumulated tax delinquency of 97 representative cities over 50,000 population stood at 48.4 percent of the 1935 levy. Wide variations among cities ranging from less than 10 percent to well over 100 percent [59] indicate that one of the important factors in the situation is the difference in tax-collection laws on the statute books and the kind of administration which accompanies them.

Many existing statutes contain provisions which virtually constitute an invitation to tax delinquency.[60] For example, in 16 States, failure to pay the first instalment of the tax has no effect on the second, instead of making the second instalment also due and delinquent and subject to the same penalties as the first instalment.[61] In other States, flat penalty rates are levied, suggesting no inducement to pay in 1 month rather than after 6 have elapsed. In still others, only an interest penalty is employed, while in 2 States there is no provision for penalty or interest.[62] Florida allows discounts of from 1 percent to 4 percent for prompt payment of taxes. In some States, no definite date of delinquency is fixed by law and in others, the date is flexible, i. e., subject to change upon application to the proper officer.

In 26 States, the real estate taxes must be paid in a lump sum. In view of the many moratoria in effect since 1931, it is difficult to make an accurate survey showing the length of time after delinquency that tax lien sales are held in the various States. In 1931, there was a variance of from 20 days [63] to 18 months,[64] and no definite time is stated in some of the laws.

Present redemption periods vary from 1 year to 4.[65] It is interesting to note that to redeem property in Illinois and Texas, the owner must pay maximum penalties of 48 percent and 100 percent respectively.

---

[56] In addition to the references previously cited in this section, the following references are relevant to the foregoing discussion:

*President's Conference on Home Building and Home Ownership*, appendix VI, Finance Committee report, entitled "Foreclosure Laws in the Various States, etc.," by Bernard S. Bailey.

Jones, *Mortgages* (8th ed.).

C. H. Wiltsie, *A Treatise on the Law and Practice of Mortgage Foreclosures on Real Property* (4th ed.).

W. A. Sturges and S. O. Clark, "Legal Theory and Real Property Mortgages." *Yale Law Journal*, 37: 691–715 (April 1928).

B. C. Gavit, "Under the Lien Theory of Mortgages, Is the Mortgage Only a Power of Sale?" *Minnesota Law Review*, 15: 147–60 (January 1931).

"Report of Investigation on Cost and Procedure of Mortgage Foreclosures," prepared by U. S. Works Progress Administration (Survey of Real Estate Laws), Project 65-97-332, under supervision of Walter Fairchild, Esq. (1936).

Library of Congress—Division of Bibliography: "List of recent references on the mortgage situation in the U. S. with references on governmental aid to housing." January 5, 1934, 160 titles. To be obtained only through the Public Affairs Information Service, N. Y. C.

Library of Congress—Legislative Reference Service: "Foreclosure of Mortgages," by R. E. Manning and J. P. Radigan, Jr. September 21, 1934. A brief summary of laws on manner of foreclosure, deficiency judgments, and redemption. To be obtained only from P. A. I. S.

New York State Library—Legislative reference section: "Digest of the laws of the various States with respect to time within which a mortgage on real property may be redeemed." W. E. Hannan, Albany, 1933. Obtainable through P. A. I. S.

McChesney and Leesman, "The Mortgage Foreclosure Problem." *Journal of the American Bar Association*, vol. 23, No. 1 (January 1937).

[57] Tracey B. Augur in "Planning Broadcasts," April–May 1933.

[58] Urban Land Policy, St. Louis, Mo., city planning commission, Harland Bartholomew, engineer. September 1936.

[59] Bird, Frederick L., *The Trend of Tax Delinquency*, 1930–35, municipal service department, Dun and Bradstreet, Inc.; and a later study by Dr. Bird, *Trend of Tax Delinquency*, 1930–1938.

[60] An excellent analysis and comparison of the provisions in the laws of all the States is contained in "Legal Provisions Affecting Real Estate Tax Delinquency, Tax Sales, and Redemption," by M. H. Hunter, published in 1933 as Bulletin No. 48 of the Bureau of Business Research by the University of Illinois.

[61] University of Illinois Bulletin, vol. XXX, No. 42, p. 8.

[62] Florida and Mississippi.

[63] Utah and Louisiana.

[64] Virginia.

[65] Four years in Utah. Five years in California, during which time the property is held by the State.

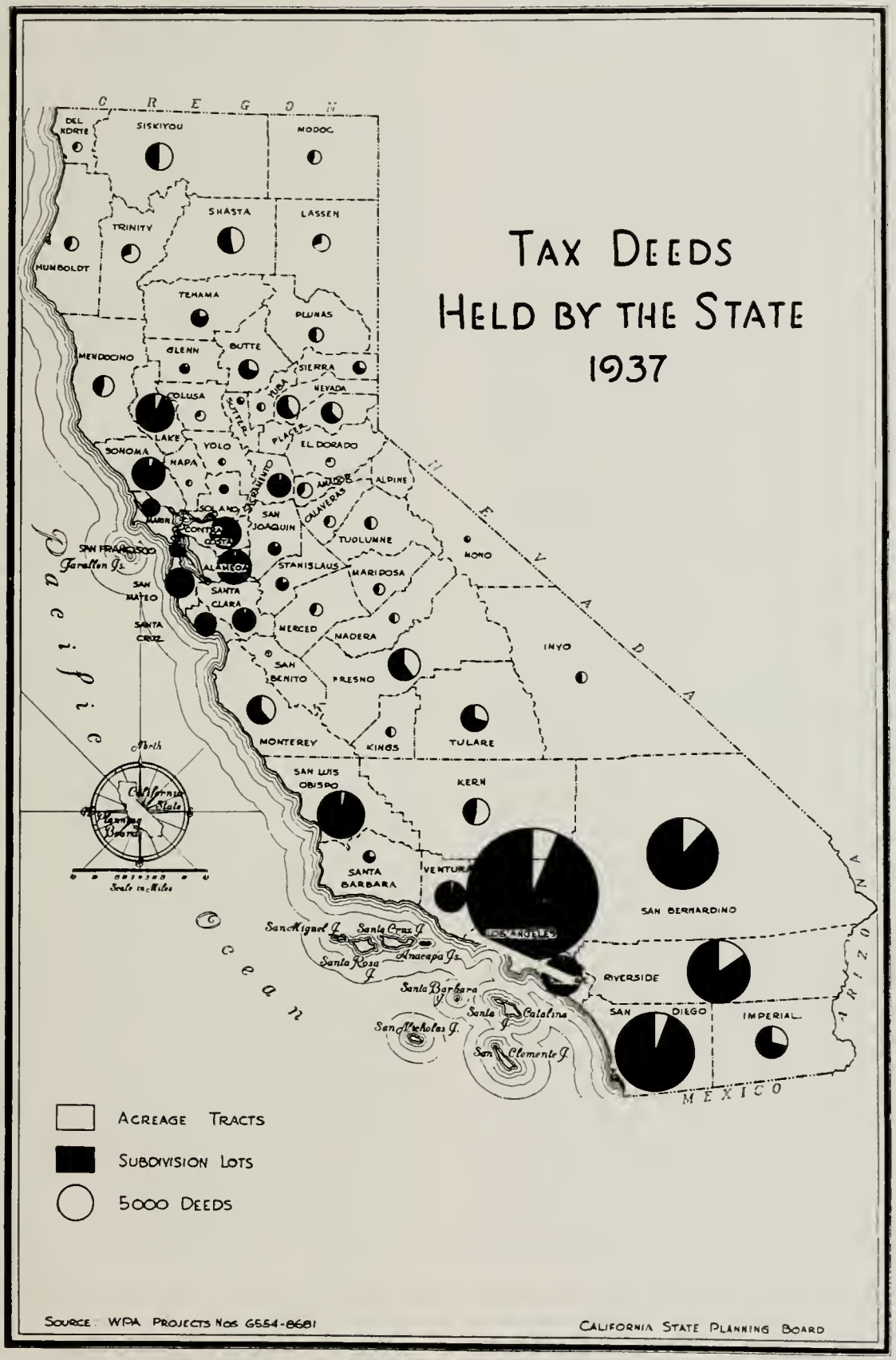



FIGURE 53.—The results of tax delinquency

It is significant, in viewing the process through which land may be eventually lodged in governmental units, that provisions covering redemption from the Government appear to be more liberal than those which apply in case of sale of tax certificates to individuals. In some instances, the redemption period is longer where a State or municipality is involved; in others, there is a lower penalty or interest.[66]

The existing provisions of the laws relating to the sale of tax delinquent property acquired by municipalities have been summarized as follows:

> In about one-half of the States provision is made whereby the State may dispose of tax-delinquent property within the redemption period for the amount of taxes due plus the added penalties and costs. This amount is substantially the same as that required for redemption. In slightly more than one-half of the States sale of the property before the end of the redemption period is either specifically prohibited or no provision is made for its sale. Thus the law of Nevada states that the land shall be held in trust. It is not meant to imply that a sale cannot be made unless provision is made therefor, since it may be possible for a governmental unit to dispose of a tax certificate as it may dispose of any other property. In a few cases officials are given a certain amount of discretion to act in the best interest of the public.
>
> It should be noted that a sale of the tax certificate constitutes merely an assignment of such rights as had been held by the State and that the right of redemption may still be claimed under the laws governing it. The situation becomes different after the expiration of the redemption period. In most cases the governmental unit then possesses a merchantable title of which it may dispose by giving a quit-claim deed. In some cases specific provision is made for the sale of such property while, in the absence of such provision, the property may very likely be sold as may any other governmental property.
>
> If the property has been neither redeemed nor resold within the redemption period, the indication is that it is not worth the taxes and penalties assessed against it. As noted above, in most States where definite provision is made for the resale of tax certificates within the redemption period, they cannot be sold for less than the taxes and penalties assessed against the delinquent real estate. The statutes of many States give recognition to the fact that the property may be worth less than the charges against it, and that much property has depreciated until it is of little value. They provide, consequently, that, after the expiration of the redemption period, the proper officials may revalue the property or sell it to the highest bidder regardless of the bid. Several States provide, moreover, for sale on the installment plan, and it is possible for the payments to extend over a period of 10 years in some cases. Obviously the purpose is to encourage the sale of the property.[67]

During the depression period, most taxing units enacted moratoria.[68] Some of these have proven very beneficial. In Michigan, for instance, a 10-year installment amortization plan has virtually resulted in a tax revival.[69] In other States, unpaid taxes were canceled outright.[70] Between these extremes are many other practices based on laws extending the original due date, laws postponing tax sales, and laws compromising the amount due.

While it is difficult to formulate a sound basis for criticizing emergency indulgences, a study reveals that many of the measures taken extend beyond momentary necessities. In part, this was due to the pressure brought to bear by real-estate groups, as well as to a lack of knowledge on the incidence of tax delinquency generally. Existing weaknesses in tax laws and practices contributed to the failure to differentiate between the deserving and nondeserving tax delinquent in many instances, a condition sorely aggravated by hastily passed emergency legislation.

In view of the chaotic situation in most States, a committee of the National Municipal League has prepared "A Model Real Property Tax Collection Law."[71]

The first 20 sections of the proposal deal with collection procedure prior to sale and contain a number of provisions calculated to aid or insure efficient collection. The sale and foreclosure provisions of the law have been summarized as follows:

> After due advertisement by posting and publication, a sale of liens for delinquent real property taxes is to be held on October 1, following the fiscal year in which liens attach. All liens held by different taxing districts against the same parcel are to be consolidated for purposes of this sale, and one district is to be charged by law with duty of enforcement. A tax sale certificate, representing the liens against the parcel, is to be issued to the bidder who will accept the lowest interest rate, the maximum allowable rate being 12 percent per annum. If there are no bids within this maximum the taxing district becomes the purchaser at an interest rate of 10 percent per annum. Failure to sell at the proper times does not affect the lien, but if the sale is not held within 3 months of the prescribed time the office of the collector is automatically vacated and the sale is to be conducted by the State tax commissioner (or similar official). In the case of liens amounting to less than $10 the sale may be deferred, in the collector's discretion, until the third October 1 following the close of the fiscal year.
>
> The purchaser of the certificate may record it and if such purchaser is not a taxing district failure to record within 3 months after the sale renders the certificate void as to *bona fide* purchasers, lessees, and mortgagees first recording their interests. The certificate is made "presumptive evidence" of the truth of its statements, title to the property and the validity of the prior proceedings. This presumption so created becomes conclusive 2 years from the date of recordation.
>
> Redemption may be had by payment of the face amount of the certificate plus interest, subsequent municipal charges and

[66] In Wyoming, the rate of interest is 8 percent where the State holds the certificate; 12 percent plus a flat penalty rate where an individual is the holder.

[67] University of Illinois Bulletin, vol. XXX, No. 42, pp. 22–25

[68] "Recent Legislative Indulgences to Delinquent Taxpayers," by Wade S. Smith, in *Law and Contemporary Problems*, vol. III, No. 3, p. 371.

[69] A Successful Advertising Plan for Collecting Delinquent Taxes, *The American City*, September 1936, p. 7.

[70] Smith, op. cit., p. 376.

[71] A report of the committee on a model tax collection law of the National Municipal League, printed as a supplement to the *National Municipal Review*, May 1935, vol. XXIV, No. 5, p. 290.

taxes, and such expenses as may have been incurred and properly proved by the certificate holder, such expenses not to exceed $12. All redemption payments are to be made to the collector for the use of the purchaser.

The certificate holder, whether private person or taxing district, may bring a foreclosure action (*a*) after 1 year from the date of sale, or (*b*) after default in any semiannual interest installment, or (*c*) after default in payment of any subsequent municipal tax or charge. When a taxing district holds a certificate it may allow redemption not only by a lump-sum payment but also by installments covering a period not exceeding 5 years, and once such an arrangement has been made the district may not assign the certificate or begin foreclosure until after default on an installment or default on payment of some subsequent tax or municipal charge. The foreclosure action may take the form of an action *in personam* or an action *in rem* at the option of the certificate holder. In the latter type of action, the only service of process required is publication and posting of a prescribed notice to the persons interested in the property, who need not be named, a *lis pendens* is also to be filed.

In neither type of action is it contemplated that there will be a judicial sale of the property. The judgment will take the form of a declaration that the plaintiff is the owner of the property in fee. Certificate owned by the same plaintiff, though affecting different parcels, may be joined in one action. Except when brought by a taxing district no foreclosure action may be concluded by judgment until all subsequent municipal charges and taxes have been paid.[72]

The laws of but a few States provide, as does the model law, for the appointment of a receiver of rents and income for the purpose of satisfying taxes 6 months in arrears. The model law provides, as do the laws of most States, that an action against the personal property of a tax debtor may precede any attempt to sell his realty.

Under the provisions of the model law, the right of redemption may be exercised within 1 year of the date of sale or at any time thereafter until the right to redeem has been foreclosed, by payment outright or, if the taxing district holds the certificate, upon an installment arrangement amortizing in 5 years.

The model law provides that after the period to redeem has elapsed or upon default in the payment of interest or taxes or other municipal charges which may accrue subsequent to the sale, the lien may be foreclosed in proceedings *in personam* or *in rem*, upon the proper publication of notice. The latter method would seem more expeditious in view of the fact that it is unnecessary that persons having an interest in the property be named in the published summons. Hence, the expense and delay involved in title searches is eliminated. The judgment takes the form of a declaration that the plaintiff is owner in fee of the property.

The model law has not been free from friendly criticisms,[73] and the suggestions of the critics deserve careful consideration. No law can ordinarily be applied without variation in all States or sections of the country, and adjustments will undoubtedly be necessary before this particular measure is adopted in any particular State.

Not only are there wide variations in tax delinquency in various States, but they exist in different cities in the same State. The conclusion is inescapable that these variations are largely due to administrative inefficiency as well as to ill-considered legislation. Elected assessors and the fee basis of compensation constitute conspicuous weaknesses in many sections. Failure to bill taxpayers and to make other concessions to their convenience aggravates the delinquency problem.

There is a definite movement toward the elimination of decentralized tax collection, and the establishment of a centralized system under the jurisdiction of a single official, with the county as the unit of operations.

Under existing laws, a number of cities have instituted a vigorous policy of foreclosure on tax-delinquent property. In Yonkers, N. Y., for example, the following conditions existed:

Nonpayment of taxes on unripe vacant land sometimes becomes a "racket." The owner allows taxes to go unpaid and lets the city buy the lien, knowing full well that he retains the privilege of petitioning for compromise of the lien as soon as he finds a prospective purchaser. If he does not find a purchaser within a few years, the subsequent taxes and interest mount so high that, as a rule, he is no longer able to clear up his debt to the city. By instituting foreclosure proceedings early in the game—before heavy arrears have time to accumulate—the city can put a stop to the racket. The tax-shirking owner must either pay up or yield his property to someone who is willing to assume the responsibility that goes with ownership. Foreclosures, therefore, are not being confined to old-lien parcels. Experience with more recent liens is proving that many owners, as soon as they are served with a notice of foreclosure, will hurry to City Hall and pay up in full. However, every consideration is shown to the bona fide actually in financial distress.

By the combined initiative of the planning commission and the corporation counsel's office, over 900 property foreclosures are now in process. More are being undertaken as fast as title searches can be completed. Legal procedure is simplified and costs reduced by combining groups of parcels in one action. Many of the foreclosures are on properties that the planning commission desires to have the city obtain as sites for needed public facilities. The majority, however, have been instituted in order to rehabilitate old-lien properties by resale for private use, and to hasten tax payments on recent lien properties before they become hopelessly in arrears.[74]

In Erie County, N. Y. (in which Buffalo is located), the magnitude of the tax delinquency problem has led to wholesale foreclosures and efficient methods of gradually reselling such property at the best possible price. In 1932, the suburban towns (townships) surrounding Buffalo found themselves with many square

[72] "Tax Sales and Foreclosure under the Model Tax Collection Law," by Henry Brandis, Jr., *Law and Contemporary Problems*, vol. III, No. 3, June 1936, p. 406.

[73] Brandis, *op. cit.*

[74] "Tax Lien Foreclosure Program Aids City Planning in Yonkers," by Theodore T. McCroskey and Charles L. Curran, *The American City*, May 1936, pp. 83, 84.

miles of premature subdivisions liberally sprinkled with tax delinquencies. In addition to regular levies, special assessments for public improvements installed on many of the vacant lots had piled up a mountain of unpaid taxes. Erie County, on which this burden mainly falls, began to foreclose tax liens and thus has acquired title to over eleven thousand properties, with foreclosures continuing at an accelerating rate.

In an article entitled "Erie County, New York, Deals in Real Estate," in the *National Municipal Review* for October 1936, Elwyn A. Mauck writes:

Since there were many lots varying widely in the number of years of delinquency in the amount of the delinquent tax burden, and on other features, the county officials had to establish certain administrative practices to guide their actions. Thus only property with unpaid taxes covering a period of 3 years or more was considered for foreclosure. For the purposes of economy, it was the practice of the county to select a large tract of delinquent lots held by a single owner. By following this practice the county acquired a few improved properties. Individually owned lots, besides being more expensive to foreclose, had better prospects of becoming taxpaying again in the future. Large tracts, vacant, long delinquent, and involving suit against only one owner, generally were selected as the "dead" property against which foreclosure proceedings should be brought.

In the sale of lots, which has become increasingly active in the past year, the county encourages building and home ownership. The prospective purchaser is given a lower price if he agrees to build a home within a limited length of time. This agreement is enforced by giving the purchaser merely a short-term lease upon the property. If he has begun construction at the end of the period, he is awarded a quit claim deed. If he has not begun to build a home, the payment made or a portion thereof is retained as rental for the period of the lease. The purchaser is granted also the alternative of paying a higher price to obtain title to the property.

Although the county is willing to sell to persons wishing to build themselves homes, very few lots have been sold upon this plan. Practically all sales have been of large tracts to investment builders. They are given a longer period in which to improve the lots, and are allowed terms better adapted to their requirements. Thus in a recent sale involving 60 lots, the builder agreed to have single-family homes constructed within a period of 2 years.

It is not to be inferred that the county is disposing of its property at whatever price it can receive. On the contrary, it is very careful to observe that its activities do not undermine the real-estate market. Such care is necessary to protect the equity of home owners and taxpayers, while a contrary course would encourage further tax delinquency. Although it does not expect to recoup at the present time the losses being sustained on the lots sold, eventually it hopes that the revival of the real-estate market will offset present losses. It hopes additional offsets will include the advantages resulting from restoration of the lots to the tax rolls and the increase of taxable values through the building of homes.[74a]

In Boston, an old city with few large tracts of vacant land:

A recent round-up of parcels which have been tax delinquent for from 5 to 30 years has made the city owner of hundreds of scanty, ill-shaped lots and scores of dilapidated dwellings.

Dismal as the collection is, a recent survey by the Boston Municipal Research Bureau[75] reveals a number of promising possibilities. The scope of these possibilities may be greatly enlarged when the full effects of the depression reach the land court.

Boston is already securing a mild measure of slum clearance in its plans to raze about three-fifths of the 81 buildings it has acquired. These "improved" properties, assessed at $382,000, are strikingly concentrated in two blighted areas. About three-fourths of the buildings are tenements or row houses.

For the most part the properties acquired are in much worse condition than their surroundings. In the long period fo transition from private ownership to foreclosure by the city, neglect, vandalism, illegal occupation, and misuse have made most of the structures dangerous neighborhood nuisances.

Demolition of forty or fifty of the buildings will provide open spaces, light, and air where they are most needed. Fire and health hazards will be reduced, and neighborhood appearances will be improved. Tearing down low-grade structures and repairing better properties are particularly feasible as WPA projects, and with careful salvaging of materials, little direct cost will be felt by the city.

Razing buildings is not always a simple matter. In cases, half ownership of a building by the city is worse than none. Boston is prevented from tearing down some undesirable holdings because this would seriously weaken the rest of the structure or adjoining buildings. The solution in these cases appears to be that of trading property for the remainder of the unit, or of securely boarding up the building. Adjoining structures of sub-standard nature often are headed for city foreclosure, and time will simplify the problem.

The renting of tax-foreclosed property presents limited and unpromising prospects, at least in Boston. Necessarily low rentals, high maintenance costs, and the expensive, time-consuming procedure of collecting small rentals, dictate the use of this policy as only a temporary procedure until final disposition of the property is decided.

In some cases it has proved more profitable to permit relief recipients to occupy the residences. Relief savings are made in this way, and a measure of tenant maintenance and protection from vandalism secured. Even this policy, however, could easily be abused and should be only temporary.[76]

The recommendations of the Boston Municipal Research Bureau relating to the sale of tax-foreclosed properties include the following:[77]

The work of the real estate division would be facilitated if the mayor and the city council establish broad policies of operation.

Assessed valuation of the amount due the city for taxes and costs are unreliable criteria for sales prices; appraised values are much preferable.

An unpaid advisory committee should be established to review sales prices, thus providing group judgment and expediting cooperation of the division, the mayor and the council.

[74a] See also a later work, "Problems Created by the Premature Subdivision of Urban Lands in Selected Metropolitan Districts," a report by Philip H. Cornick, of the Institute of Public Administration, to the State Planning Council, Division of State Planning, New York, February 1938, pp. 27–34, 99, 133.

[75] "Management of Properties Acquired by Tax Title Foreclosure in Boston," by Loeffler, Atkins, and Sheppard; August 20, 1936.

[76] "Foresighted Use of Tax-Foreclosed Property," by S. S. Sheppard, *The American City*, September 1936, pp. 79–80.

[77] *Ibid.*, p. 81.

Sales should be by public auction even where acceptable offers have been secured.

"Dumping" properties at low prices should be avoided. A considerable amount of marginal land should be withdrawn from private use for some time to come.

Foreclosure on properties whose taxes became delinquent in 1932 will soon indicate what steps should be taken to organize the real estate division on a more adequate basis.[78]

**Other Legal and Economic Aspects of Land Titles**

In order that the rapid and economical transfer of titles may be facilitated and that the maxima in social titles and economic benefits may be derived from land, we recommend a study of the common law and statutory rules relating to real property and of private restrictions in deeds and contracts insofar as they affect urban land use and planning. We also recommend a study of the effects of mortgage moratoria and emergency rent law legislation,[78a] especially in the light of their influence on the investment of funds in desirable dwelling and commercial construction and in the light of the tendency to keep such legislation in force after emergency conditions have ceased to exist.

## Effect of Long-term Leaseholds

Long-term leases date back to the ancient Greek and Roman governments. They were well known to England of the thirteenth century. Ecclesiastical and other corporations were required by law to keep the fee simple of their lands in their own hands; hence, they adopted the device of letting their lands for a fixed term of years. The practice was gradually taken up by private land owners, who may or may not have foreseen an increase in land values, but who certainly recognized the system as a tool for retaining land as a source of income to their families and heirs. It is not necessary for our purposes to consider in detail the original practices and the legal basis therefor, or the changes in practices and in the law that prevailed or took place abroad. It is sufficient to say that American settlers from England were well acquainted with long-term leasing and utilized it very early in the history of this country. However, since the widespread leasing of land does not usually occur until there is a scarcity or values soar, the use and importance of the long-term lease has really developed with the growth of our urban communities.[79]

It is difficult to formulate a precise definition of a long-term lease, since the period covered by a lease so called differs from place to place. In England, for example, long leasehold tenure is for a period of over 99 years (usually for 500 or 999 years). Some leases recorded in Detroit, Mich., in 1834 were for 999 years. A lease created in Chicago in 1834 was for the same period. Another, made in 1817 in Boston, was for 1,000 years. One writer classifies as long-term leases those which run for more than 25 years, while another indicates a minimum of 50 years. The term generally used in the United States at present is 99 years.

The distinctive features of long-term leases are usually found in the provisions which require the tenant to erect improvements, pay taxes, manage the property, and pay a fixed rent to the landlord. It is obvious that a lessee will be interested in such operations only when the period during which he may use the land is long enough or the recapture provisions are such as to assure him a cumulative profit over and above the outlay, since all appurtenances attached to the real property become part thereof and at the end of the lease revert to the owner of the land.

The question of the desirability or undesirability of long-term leases has, as a rule, been approached from a single point of view, i. e., the benefits to be derived by the parties to each lease. There has been little or no consideration of the effects of such transactions upon the community. This shortsighted policy is consistent with our traditional failure to find and analyze the facts and factors which affect land use and our lack of fundamental and sound land use policies. The infiltration of existing long-term leasing practices has not been of a spectacular character, and the implications of such practices have been overlooked.

The laissez faire policy with respect to long-term leases does not now prevail in Baltimore, Md., where the practice of long-term land leases for residence property (the so-called "ground rent" system) had been prevalent and legally indistinguishable from leases on business property. A realization of the eco-

[78] In addition to the references in the foregoing footnotes, the following are relevant:

*Collection of Local Taxes in Pennsylvania* (1932), B. E. Nicholson. *Final Report of the California Tax Commission to the Governor of California* (1929). "Home Finance and Taxation" (1932), *President's Conference on Home Building and Home Ownership. Municipal and County Financial Administration* (1931), Report No. 3, of the Commission to Investigate County and Municipal Taxation and Expenditures (N. J.). *Municipal and County Financial Administration* (1931), Report No. 6, of the Commission to Investigate County and Municipal Taxation and Expenditures (N. J.). *One Assessment—One Levy* (1912), Alfred E. Holcomb. *Preliminary Model System of State and Local Taxation* (1918), National Tax Association. *Report of the California Tax Research Bureau, State Board of Equalization* (1933). *Report of the Connecticut Temporary Tax Commission to Study Tax Laws and Recommend Revision*, submitted to the Governor (1934). *The Georgia System of Revenue* (1931), submitted to Governor Hardman by Harley Leist Lutz. *Report of the New York State Commission for the Revision of the Tax Laws* (1932). *Report of Wisconsin Legislature Interim Committee* (1935). *The Collection of General Property Taxes on Farm Property in the United States, with Emphasis on New York* (1927), M. Slade Kendrick. *The System of Taxation in Maine* (1934), report to the State legislature prepared by Harley Leist Lutz.

[78a] See *Rent Control in War and Peace*, Edith Berger Drellick and Andrée Emery, National Municipal League, 1939.

[79] To illustrate: Until 1920 or thereabouts, practically all long-term leases in the Chicago districts were on property in the central business section. By 1928, properties valued at over $26,000,000 had been let under long terms, about two-thirds of the total amount being in the central business district, over $5,000,000 in outlying districts within the city limits, and about $3,000,000 in Evanston.

nomic dangers of the situation resulted in the passage of a statute in 1884 providing that all rents created after that date for longer than 15 years were to be redeemable [80] at any time after the expiration of 15 years, for a sum of money equal to the capitalization of the rent reserved at the rate of 6 percent (or less if specified in the terms of the lease). By subsequent laws (1888), the period of redemption was shortened to 10 years, and in 1900, to 5 years. Now ground or land rents on residences represent, practically speaking, a first mortgage on property, upon which the leaseholder pays 6 percent and which matures with the exercise of his statutory option to purchase the property. The Maryland law allows terms of 99 years (inclusive of renewals) for long-term leases on business properties.

Outside of Baltimore, the tendency towards long-term residential leases has never developed to any important extent. Modern high-class cooperative or semicooperative apartments in cities such as New York, Chicago, Boston, and Washington, D. C., built on the fringe of exclusive business districts, can hardly be cited as exceptions, since they are comparatively few in number and represent a highly specialized type of enterprise differing inherently from the problems involved in most long-term leaseholds.

The 99-year lease on business property is well known throughout the United States and used in almost every large city. In some States, such as New York and Ohio, such a lease is renewable forever. In others, including California and Michigan, a 99-year lease is not renewable. The recent trend in such leases is to include an option to the lessee to purchase the property at the end of the term.

There has been very little legislation affecting long-term leases. It is interesting to note, however, that many municipal corporations are prohibited from acquiring leasehold interests for long terms. New York City, for example, may not lease land for longer than 10 years at a time. Most of the leases approved for it are only 2 or 3 years long. We wonder why a municipality, which pays out enormous sums in rent, is not entitled to some share of benefits from a system which private individuals find so lucrative. Where land is expensive, a city might take advantage of long-term leasing to assist it in developing a low-rent housing program.

A long-term lease offers many advantages to the landlord. He retains an interest in the land for all time. If his land is in a desirable neighborhood, it may command a high rental; if it is in an undeveloped or growing community, building thereon by the tenant will increase its value and enhance the reversionary interest reserved to the landlord and his estate. All the while, his property is yielding a rent, and he has no care or responsibility in looking after it. Frequently, extremely high-priced land which could only be purchased with enormous sums of money is in great demand for leasing. The chain-store type of organization, for instance, not having the funds or the inclination to buy expensive land in various cities, has contributed to the vast number of leasing transactions of recent years. Then, too, defects in title or the absence of a part owner may impede the transfer of a fee, while leasing is a simple practice which may easily overcome these difficulties.

Of the three types of long-term leases most commonly used, the "ungraded" or "straight" lease, in which the rental is a fixed annual sum for the entire period, is most popular. In such leases, the stipulated rents are usually better than the expected net income at the time of the execution of the instrument. In this way, the landlord shares with the lessee in probable increment. The "graded" lease, in which rent increases are effected at certain intervals during the term, and the "reappraisal," in which the rent fluctuates according to periodic revaluations, are the two other types of leases. The latter is generally disapproved because of the uncertainty attached to it. Whatever may be the type of instrument used, the landowner is likely to save much in income and excess-profit taxes, which he could not do were he to sell his land. For income-tax purposes, profit realized in a sale is "income" for the year of the sale, while rent received under a lease constitutes income for each year of the lease.

The advantages of long-term leases to tenants may be gleaned from the preceding discussion. The lessee may retain the major portion of his capital for the development of the properties. In effect he borrows capital (the land) from the owner and pays interest in the form of rent, rather than to a bank or investor for a loan. He obtains control, which amounts practically to ownership, of the fee for the term of the lease and, at the same time, is the recipient of any increase in values which may accrue during the term. Leaseholds in highly developed retail centers have sometimes attained a value far in excess of the value of the fee.

There are certain obvious disadvantages. For instance, no matter how good a bargain the lessee may strike, he is always at the mercy of the lessor in that buildings must be approved by the latter and his consent in subletting, etc., must be secured. Furthermore, since the lessee is responsible for all taxes, a time may come when the value of the property for his purposes

[80] Redemption here means the right of the owner of the leasehold to compel the owner of the property to sell and convey the property to him and thus bring to an end the payment of rent.

is materially exceeded by the assessment upon which the taxes are based.

While land values as enhanced by long-term leases may shed a kindly glow upon a city's revenues through taxation, their effect is not always to the public good. Due to the fact that buildings on leaseholds revert to the landlord, tenants often refuse to make improvements toward the end of a term. As a consequence, buildings and neighborhoods are neglected and become dilapidated. There is no incentive on the part of the lessee to keep the property in good shape. The value placed on the land, in or near the important business districts, is so great, however, that it might strain the city's financial resources to cope with the evil through condemnation proceedings. The existence of more than one party in interest, each with powerful resources, makes such proceedings more difficult and expensive than ever. Furthermore, the trustees of estates having an assured income from long-term leases often refuse to sell the reversionary interest in the property and thus retard important business or neighborhood developments. In some instances, where the leased property is but a small part of the property to be assembled, the owner becomes, for all intents and purposes, a "hold-out."

The attitude of the Land Inquiry Committee in England is noteworthy.[81] While the English lease problem is not strictly analagous to our own and while long-term leases there are those over 99 years, we may yet pay heed to the committee's examination of leases in the 21 to 99 years' class. It recommends that leases be drawn with some regard to public improvement as against the sole consideration of private tenure; that in the event the public interest requires certain leaseholds, the law provide for proportionate compensation according to a definite plan; that the power to veto improvements and alterations in use or assignments should no longer be an absolute one, exercisable at the lessor's uncontrolled discretion, but should be subject to review by an impartial tribunal.

Compared with a report of the National Association of Real Estate Boards made several years ago, which recommended the use of 99-year leases *renewable for ever* "on account of special advantages to the lessor in connection with tax and inheritance laws,"[82] the English report appears Utopian in its purposes and recommendations. It should be remembered, however, that an equitable system of leasing, like any plan affecting property rights, can result only from viewing the problem very broadly and considering the interest of the public. To adopt the realtor's outlook may preclude discovery of defects which legislation and revised practices could overcome. The parties to a long-term lease are incapable of foretelling the future, and, more likely than not, their transaction will be adverse to the public interest.

Certain tentative conclusions are permissible. The ground-rent system, as practiced chiefly in Baltimore, because of this simple financing procedure, has led to greater home ownership in that city. Long-term business leases have aided materially in advancing large real-estate projects. The widespread practice of erecting valuable improvements upon land held in fee by another party tends to weaken the argument against public ownership of land with leasing for private purposes. Leases in excess of 99 years, irredeemable leases, and those providing for renewals in perpetuity are detrimental to the public interest and should be forbidden by statute where no such legislation exists.

There is need for a complete study of the extent and variety of long-term leases and their practices in the United States, and of their effects upon urban land use. Such a study should be followed by the formulation of basic policies and the enactment of appropriate legislation.[83]

---

[81] *The Land. The Report of Land Enquiry Committee*—1914. Volume 2, part 3, pp. 343 et seq.

[82] "The Long-Term Lease: Its Importance," *The Economist*, March 22, 1930, Section Two, at page 4.

[83] References:

Stanley L. McMichael, *Long-Term Leaseholds*, Prentice Hall, Inc. Charles Pryor, *Long-Term Leaseholds*, The W. H. Amerson Co., Cincinnati, Ohio. Clarence M. Lewis, Long-Term Leases, an address delivered before the New York State Association of Real Estate Boards, October 3, 1930. "The Long-Term Lease: Its Importance," *The Economist*, March 22, 1930, § 2. Louis J. Jira, "Maryland Ground Rents," *Baltimore Real Estate News*, February 1933, vol. 3, No. 2. *The Land, The Report of the Land Enquiry Committee*, vol. 2, pp. 360–445. Ernest M. Fisher and Marvin L. Neihuss, "Catalog of Long-Term Leases in Detroit," *Michigan Business Studies*, vol. II, No. 5, July 1929, published by the Bureau of Business Research of the School of Business Administration, University of Michigan.

Mark Levy, "Fifteen Famous Leases," *National Real Estate Journal*, July 22, 1929, at p. 52 *et seq.* Marvin L. Neihuss and Ernest M. Fisher, "Problems of Long-Term Leases," *Michigan Business Studies*, vol II, No. 8, May 1930.

# PART III—SECTION 3

# CITY PLANNING, ZONING, AND SUBDIVISION CONTROL AS FACTORS IN URBAN LAND POLICIES

## How the Street System Can Be Used to Influence Future Land Uses

The street plan is all important in determining the use of urban land, not only the type of general use, but the intensity and efficiency of that use. For business, the blocks can be made short between intersecting streets, and the streets can be made extra wide. Neighborhood store sections on main highways should have widened rights-of-way to provide parking space away from the main flow of traffic. For industrial areas, heavy pavements, easy grades, high-pressure fire mains, and accessibility to railroad sidings should be provided.

Where it is intended to encourage the development of small homes, streets can be reasonably narrow, even as narrow as 30 feet, and sidewalks can be omitted. Such a procedure, if applied, should be limited to relatively small areas adjacent to and served by wide trafficways. The cul-de-sac or dead-end street, long regarded with abhorrence, has recently been rediscovered and found to possess many virtues, chief of which is the elimination of all traffic except that intended for the houses fronting

Fairchild Aerial Surveys, Inc.

FIGURE 54.—Showing the improvement which provides for a more extensive park and the replacement of the vertical sea wall, with a sloping riprap bank

upon it. In general, however, apartment house areas should have wide streets and be provided with ample parking spaces on or off the street. Parkways and boulevards from which commercial traffic is excluded have proved of much significance in promoting the utilization of adjacent land for residential purposes, both for single and multifamily housing, while nearby land not so close to the parkways has remained undeveloped or has developed more slowly. Thus, where the streets are highly functionalized with reference to their traffic use, the street plan itself more or less automatically excludes business and industrial uses from residence areas and confines them to the main traffic arteries. Where all streets, however, are stereotyped as to width and layout, there is a tendency, barring offsetting topographical forces, for business and industrial uses to scatter and invade the residence areas.

Cities with regular street plans in the downtown section, each street being equally accessible to the residence districts, tend to develop large commercial centers in the heart of the city. As illustrations of this tendency, witness Chicago, St. Louis, and San Diego. Cities with downtown streets of very unequal traffic values, on the other hand, tend to develop elongated business districts stretching out along the main thoroughfares leading into the residence sections. The shoestring business areas in the downtown districts of Newark, N. J., and Bridgeport, Conn., are the direct result of broken, narrow, offset streets on either side of the main thoroughfare passing through the heart of the city.

It should hardly be necessary to state that each of the three major uses of urban land—residence, business, and industry—has its own peculiar requirements when it comes to block and lot layout. Nevertheless, this consideration is too often ignored by developers who lay out all streets of the same width, all blocks of the same dimensions, and all lots of the same size. Such a platting produces land units of very unequal value for different purposes. A block and lot pattern which may be well adapted to a one-family detached house development is naturally not designed for a heavy industrial district, yet many of our industries have to utilize areas platted in this manner. The cramping of industrial development, the forcing of an uneconomic type of

From *The American City* for March 1937

FIGURE 55.—Aerial view of Port Arthur, Tex.

building and manufacture upon industry, and on the city of many sorry compromises in the adjustment and closing of streets, are among the costly results which could be obviated in future developments by intelligent street planning.

### Building Lines and Official Maps as Aids in Street Acquisition

A master plan is an essential prerequisite for any satisfactory program of property acquisition for community purposes. In no case is it more important than in connection with new or widened streets. In order to protect the city against needless expense in street openings or widenings indicated on the master plan, the local government must prevent buildings from being erected in the bed of mapped streets. Three methods[1] have been devised for providing such protection:

1. Setbacks incorporated in zoning plans.
2. Building lines, using either police-power or eminent-domain procedure.
3. Official maps, using either police-power or eminent-domain procedure.

If put into effect under police-power procedure, no compensation is required under any of these methods at the time of adoption. In every instance, however, when it comes time for the actual street widening or opening, the property needed must be acquired in one of the usual methods discussed elsewhere in this report.[2]

In the section of this report on zoning, the use of setbacks has been discussed and its advantage over building lines pointed out. In brief, zoning is comprehensive, city-wide rather than piecemeal, unrelated planning, as is often the case with building lines.

In several States, planning enabling laws enacted in the last decade provide for an official map, to be adopted by the local legislative body, embodying those features of the master plan that the local administration is definitely committed to carry out. The official map may be amended after proper hearings and action by the legislative body. The operation of the New York law is described by Frank B. Williams in *The American City:*[3]

> For the purpose of preserving the integrity of such an official map, this law provides that no permit shall be issued for any building in the bed of any mapped street; except that if the land within the bed of such a street is not yielding a fair return to the owner, the board of zoning appeals shall have power to grant a permit for a building in such a street which will as little as practicable increase the cost of opening the street or tend to cause a change of the official map; any such decision being subject to review by certiorari.

[1] For a full discussion of this whole subject see Black, Russell Van Nest, *Building Lines and Reservations for Future Streets.* Harvard City Planning Studies VIII, 1935.

[2] See Section II.

[3] "Zoning and Planning Notes" for April 1936, p. 103.

The device of the official map has not been in operation long enough in most States to have been tested thoroughly in practice or in the courts. In a recent case arising in Rochester,[4] however, the highest Court of the State of New York upheld the validity of the official map for use in street widenings. In this decision, the court said in part:

> The sole complaint of the plaintiff is that so long as that section remains in force, the effect of the ordinance adopted by the city is to restrict the use to which the plaintiff may put his land in the bed of the street and to that extent constitutes a taking of his property, and that, since the city is not required to pay any compensation to him unless or until at some time in the indefinite future it may choose to take title to the land, the effect of the ordinance is to deprive him of his property without due process of law.
>
> Not every restriction placed by authority of the State upon the use of property for the general welfare of the State without payment of compensation constitutes a deprivation of property without due process of law. This court has sustained a reasonable restriction upon the height of signs on roofs, saying: "Compensation for such interference with and restriction in the use of property is found in the share that the owner enjoys in the common benefit secured to all." (People ex rel. Wineburgh Advertising Co. v. Murphy, 195 N. Y. 126.) Under the provisions of the General City Law the owner of land in the bed of the street shown in a map remains as free to alien the land or to use it as he sees fit as he was before the map was adopted, except in one respect. If he desires to improve the property by erecting a building for which a permit is required, the grant of such a permit is surrounded by drastic conditions or restrictions which will in many cases act as an obstacle to such use of the land. * * *
>
> Whether the State may impose conditions for the issuance of permits in order to protect the integrity of the plan of a city where it appears that such conditions interfere with a reasonable use to which the land would otherwise be put or diminishes the value of the land, should not now be decided. Without proof that the imposition of such conditions has deprived an owner of land of some benefit he would otherwise derive from the land, there can be no deprivation of property for which compensation should be made.
>
> Solicitude for the protection of the rights of private property against encroachment by government for a supposed public benefit does not justify the courts in declaring invalid a public law which serves a public purpose, because 10 years after it has been on the statute books a single owner, without proof, or even claim, of actual injury, asserts that he has been deprived of his property.

### Relation of Land Zoned for Various Uses to Present and Probable Future Needs

While most students agree that our American cities are overzoned as to their business and apartment-house areas—both as to extent of such areas and as to the intensity of land use permitted—there is quite a sharp difference of opinion as to just what constitutes overzoning. The more conservative group of planners argue that zoning must recognize as a suitable use that for which any area under examination seems best

[4] Headley v. City of Rochester. See *The American City* for February 1937, p. 99.

adapted, and that if a street is partially developed with stores or apartment houses, the entire area within the district affected by such existing structures has already been impressed with a type of use whose extension throughout such district must logically be permitted.

Over against this group of zoning authorities who accept and are guided by *de facto* conditions stands a group who argue with great force that, since a community in the last analysis can support only so many stores per thousand inhabitants or fill so many apartments in multifamily structures, it is folly to allow excessive areas within which such structures may be permitted. This group may well be called the quantitative school of planners.

As is usually the case in such controversies, wisdom lies somewhere between the two. The "quantitativists" offer computations of what is sufficient, whereas the "de factoists" tacitly accept whatever accidental pattern already exists, illogical though it may be. Consequently, it seems worth while to review briefly the evidence adduced by the quantitative school, because recent surveys of business vacancies in once prosperous downtown districts convey the suggestion that they may be largely right.

In the appendix are included references to studies covering several typical cities, indicating that there are fairly definite norms for the amount of urban land used for various purposes. Although, because of local conditions, many cities vary considerably from these norms, the majority tend to be reasonably close to them. A rough generalization from these figures yields the relationships set forth in table 4.

TABLE 4.—*Average space requirements of American cities*

| Use | Net acres per 100 persons | Percent of developed area |
|---|---|---|
| Residence | 3.0 | 40 |
| Commercial | .2 | 3 |
| Industrial | .5 | 7 |
| Railroad property | .4 | 4 |
| Streets | 2.7 | 30 |
| Parks and playgrounds | .6 | 6 |
| Other public uses | .5 | 6 |
| Semipublic uses | .3 | 4 |
| Total | 8.2 | 100 |

Larger cities tend to have less area in residence and more in commercial and industrial uses. In all but large, solidly built cities, only a small proportion of the residential area is given over to multifamily buildings, usually less than 2 percent of the developed area. Further study should be made of many other cities to reveal more accurate norms for cities of various sizes and types.

Admittedly, no standards should be applied to every city regardless of local differences. Each city should have a land-use inventory showing the particular local situation. The land-use figures presented here and in the appendix will then form a basis from which the probable future needs can be roughly estimated in the light of the present local distribution as revealed by the land-use inventory.

In most cities, zoning maps are very poorly correlated with the probabilities of future absorption. In reply to questionnaires on this subject sent out in 1936, the National Resources Committee received adequate material from only 5 cities ranging in population from 825,000 to 250,000.[5] These cities had commercial zones from 2 to 4 times larger than the area actually used for retail business and offices. For industry of various types, with the exception of Providence, R. I., zoning provided from 2 to 5 times more area than was actually used. Again with the exception of Providence, multifamily and two-family zones were from 2 to 29 times larger than the present area in these uses. In all the cities, less area was zoned for single houses than was actually in use, in spite of large vacant areas in all of them, awaiting development, probably mainly with one-family houses.

In the light of present population trends, it is very doubtful if any of these cities will double in population during the present century, if ever. Yet all of them reserve from two to five times more area for all purposes except single houses than is now used for those purposes.

In the field of multifamily housing, absurd conditions have resulted from the too-common practice of permitting new residential structures to be built of a bulk which produces crowding almost or fully as great as the worst congestion of the past. For example, a questionnaire to cities of over 100,000 population sent out by the editor of *The American City* in the spring of 1936 revealed that it is legally possible in several cities for a developer to erect on a 1-acre plot a residential building having a bulk in excess of 4,000,000 cubic feet.[6]

Families-per-acre restrictions are likewise inadequate in most jurisdictions. The permitted number of families per net acre reported to *The American City* by cities having such restrictions varied from 69 to 216.

Zoning ordinances which permit such needless concentration of population in multifamily districts and, at the same time, provide areas for such development greatly in excess of any possible requirements make a travesty of the protection they are designed to afford.

[5] For list of cities and data received, see appendix.

[6] *The American City* for June 1936, p. 81. See appendix for exact figures.

In St. Louis, one-third, and in Providence, R. I., one-sixth of the area used for residence is in industrial or commercial zones. Residences thus unprotected naturally tend to fall into disrepair, thus fostering blighted or slum conditions.

*De facto* zoning, taking into consideration the existing conditions and the suitability of adjacent land for similar development, has a definite place in zoning technique, but such zoning has not solved the problem and has, in fact, by its very nature, created new problems of great seriousness.

In all candor, have we not reached a point in America where the public welfare requires that municipal officials, city planners, and real estate operators shall sit down together, face the facts, determine the reasonable prospects for future growth, and then plan and zone accordingly, limiting business and multifamily districts to what may reasonably be supported by the anticipated population? Until we collectively and constructively face this issue, it will continue to be too nearly true that no regulations at all are preferable to those which purport to give protection and to guide growth but which, because they are so totally unrelated to obvious facts, do neither and merely aggravate the situation by conferring a false sense of security.[7]

## Real Estate Subdivisions

### Waste of Resources From Speculative Laying Out of Building Lots

Some of the appalling wastes of resources, both public and private, which follow in the train of excessive or premature subdivisions have already been touched upon, but a more detailed discussion of these losses and some illustrations may be appropriate at this point.

*Waste of public resources* from excessive subdividing occurs by reason of:

(*a*) The installation at public expense of improvements which presumably are to be paid for by special assessment levies. Too often such costs are not so paid and later have to be met by the taxpayers who do pay regularly, which puts on them an extra burden. This is probably one of the most serious wastes.

(*b*) The high percentage of taxes which are left unpaid and allowed to accumulate against the lots pending their sale. This creates a fictitious tax base and results in borrowing on anticipated collections of taxes which do not materialize. Interest costs pile up, and the whole municipal structure is thrown out of gear. In consequence, taxpayers who pay must bear an added burden.

(*c*) The additional clerical labor and cost involved in recording, indexing, levying taxes, and billing many small parcels instead of fewer large parcels.

[7] A comprehensive discussion of *Bringing Zoning Up to Date*, by Herbert S. Swan, will be found in the appendix.

Studies made for the Division of State Planning of New York bring this out vividly.[8] In one town of Monroe County—Pittsford—there is a certain subdivision of 202 lots. These lots in 1934 were assessed for about $62,300. There were in 1934 arrears of general town and county special district and school taxes against these properties amounting to about $104,500, and over $252,900 of known future special assessment installments on the sewer, still to be paid. In addition, there will be the cost of pavements, water mains, sidewalks, etc., still to be installed. Thus, there are already past and future commitments of $360,000 on properties which, with the improvements counted in, are worth only about one-fifth of one sixth of that amount. Obviously, no purchasers will step into such a picture knowingly and pay back the municipality. There is a dead loss that is being borne by the other taxpayers, not only of the town that permitted the folly but of the county as a whole.[9]

*Waste of private resources* due to vacant lots in speculative subdivisions occurs by reason of:

(*a*) The withdrawal from use of good farmland that was producing annual crops of value sufficient to recompense the farmer and pay the taxes levied on the basis of its full use as farm land.

(*b*) The unnecessary expenditures for engineering surveys, filing fees, salesmen's salaries and commissions, organization expense, advertising, publicity, free transportation of prospects, etc., incident to high-pressure real estate subdivision methods.

(*c*) The loss of any funds of the developer who undertook to install at his own expense and to absorb in the price of the lots, any grading, street, sidewalk, sewer, water or other facilities necessary to convert raw acreage into usable building sites.

(*d*) The loss of funds and actual properties of those who do build in orphan subdivisions. Thus, many have lost their homes because the developer secures a blanket mortgage on the tract, sells off the lots on contracts of purchase, holding the title until the contract price has been paid in full. Then he secures from the mortgage institution a release of that particular lot and conveys title to the purchaser who has bought or built his home and paid off his contract. This system works so long as the developer continues selling enough lots to keep his interest payments on the blanket mortgage up to date. When he fails, the mortgage institution clamps down, refuses to release any lots that may have been paid off in full to the developer, and foreclosures upon the whole tract, except those lots which have previously been released and deeded over. By this method, a purchaser

[8] *Problems Created by the Premature Subdivision of Urban Lands in Selected Metropolitan Districts.* Philip H. Cornick, Division of State Planning, New York, February 1938.

[9] *Ibid.* p. 153.

who has kept his contract and paid off the full amount of the contract price may lose not only his lot but the house that he has built upon it. The inequity of such a situation is so obvious as to make fuller comments unnecessary.[10]

To these costs, others might be added. The public is penalized in being forced to carry streets and sewers and other public improvements long distances, past vacant lots already equipped, to outlying new subdivisions which do not need them; and the private individual who is improvident enough to purchase a lot in such an isolated distant tract must add to his daily expense, in time or money or both, the cost of additional unnecessary travel to and from his work and to and from the shopping district where his family gets its daily supplies. Deliveries of all kinds cost more, garbage and trash removal costs are increased, and everyone loses except those who in the chain of transfer, happened to buy low and sell high and those who performed services in the exploitation of the land, provided they were actually paid for them.

Philip H. Cornick, as a member of the staff of the Institute of Public Administration, presented through that body to the Westchester County Commission on Government in 1935, a report on the subject of "Land Use and Local Finance" in which he pointed out that:

> The greater part of the outstanding arrears of taxes have accumulated in all parts of the county against two types of property—vacant lands in premature subdivisions, and large multifamily and business buildings erected in premature apartment house and business zones. * * * Public improvements, installed to serve the vacant lots which are now in arrears for

[10] It will be understood, of course, that the criticisms in this paragraph do not apply to conservative investments in needed and well-planned subdivisions.

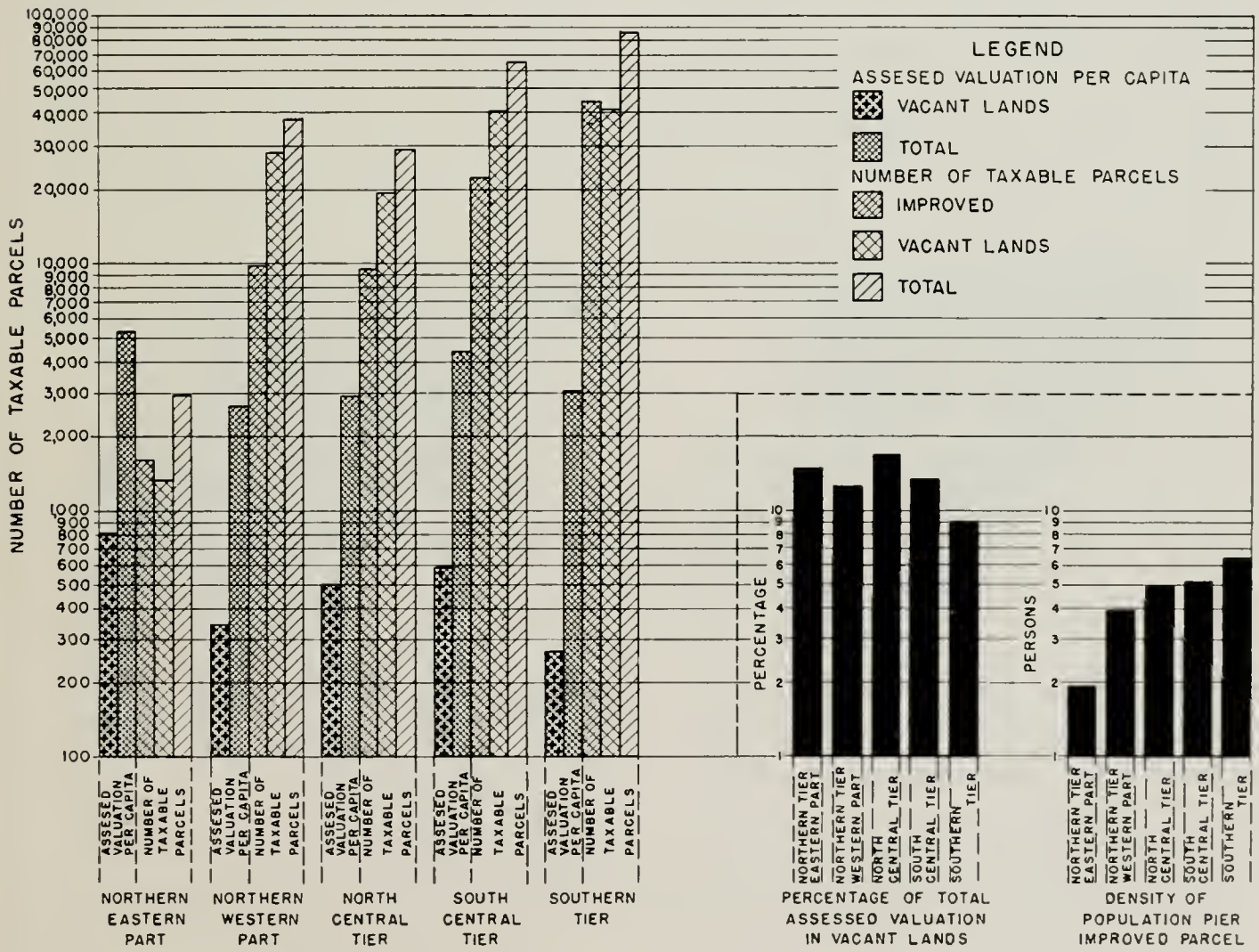



FIGURE 56.—A chart based on data issued by the Westchester County (N. Y.) Commission on Government

taxes, are responsible for the existence of a large but undetermined part of the outstanding debt and of the recurrent annual tax burden. * * * A very large percentage of the vacant lots now in arrears * * * have acquired without legal warrant, almost the same status as tax exempt properties. The only difference is that on the latter, taxes are neither levied nor collected; on the former they are levied but not collected. The county's experience in the past with the wreckage of premature subdivision on a small scale holds out small hope that any considerable part of the present oversupply of vacant lots in arrears, outside of a few choice areas, will relinquish this quasi-exempt status for some time to come.

In Los Angeles County, there are sewers, water mains, street paving, and sidewalks for twice the present number of houses. Additional taxes as the consequence of this excess subdivision are reported to amount to more than $3,000,000 annually for the maintenance of services furnished to vacant lots. Of this tax load, 73 percent is paid by the owners of improved property. They are the real victims of the land peddler and his ilk. Theirs, too, is the responsibility for permitting the orgy of oversupply, for they are the voters who control the governments that permit or sometimes even encourage the wild speculation. If they can be made to realize that such subdivisions far in advance of needs will result in raising their own taxes rather than in lowering them, there will arise a changed public opinion that will demand laws and officials to curb this menace to their equities in homes and business structures.

With respect to the general use of the police power in planning, platting, and zoning matters, two schools of thought have arisen. The conservative viewpoint may be summed up as follows:

**The Conservative Viewpoint as to Subdivision Control**

The courts in general are loath to interfere with the free alienability of land. What the purchaser may do with the land is, however, a proper concern of government. Thus, planning laws and regulations of local planning boards that attempt to define minimum sizes of lots *per se* or to make it unlawful to change the boundaries of lots that have once been sold from a plat are usually thrown out of court with great dispatch. Practically every State in the Union has on its statute books one or more laws purporting to prohibit the selling of land in subdivided areas by metes and bounds to avoid the filing of a plat, and nearly all of the States declare such sale to be a misdemeanor punishable by fine. Edward M. Bassett, however, who has followed this phase of attempted subdivision control for years, has yet to hear of any conviction for this offense. These statutes are, therefore, dead letters.

In some of the western States, there has been considerable use of "strong arm" methods by which developers have been induced to do things admittedly in the public interest, but which the courts would probably have overruled had these regulations come before them for adjudication.

Under the Constitutions of the United States and of the several States, the mere assertion of a public right or paramount interest does not override the traditional and accepted rights of individuals. In other words, public regulation of the use of private property, while growing in scope and moving forward steadily with advancing public opinion, must nevertheless be clearly related to one or more of the basic justifications for the use of the police power, namely, to the public health, safety, morals, or general welfare.

The conservative school maintains that it is only when one or more individuals desire to obtain access to land over public rights-of-way or to use land as a site for a building of some kind or for some use that, by its very nature, may adversely affect the peace and comfort or the health, safety, morals, and general welfare of the owners or occupants of surrounding properties, that a public interest becomes involved and that there is legal justification for public interference with the process of partioning the ownership of land. It is use, present or potential, and not ownership of land that justifies the employment of the police power to protect the inherent rights of neighbors and the general public.

The public may, through appropriate zoning and other building regulations, determine the maximum but not the minimum height and depth (or bulk), the type of construction, and the use of the structure, the area that must be left open about it, and the density of population that may be housed therein. All of these regulations presuppose the existence of suitable building sites. The location of the building site, however, its adaptability for the use intended, the means of access to it over public or private rights of way, the provision of pavements, sewers, watermains, sidewalks, and similar purely public services are elements that in combination make a usable building site out of an area that, without them, can only be described as a parcel of land. It is with these latter elements that we are concerned in the matter of public control of land subdivision, or rather land development.

Accordingly, even the most conservative jurisdictions require, as a precedent to the granting of a permit for a building or use, that the land on which it is to stand shall front upon a street, either public or private, which is shown upon the official map of the municipality. The official map is not concerned with lots but only with the width and location of streets, parks, and other public open spaces; this is the law in New York, and for its limited purpose, it works admirably. Indirectly, it does exercise some control over lots, in that the distance between parallel streets

indirectly controls the depths of the banks of lots facing such streets. Coupled with the requirements of lot area per family in the zoning ordinance, the platting law therefore does contribute to establish a minimum size of lots.

To the conservative legal mind, the New York planning laws, in conjunction with the zoning ordinances of the various municipalities, conveyed adequate power to control lot sizes and to compel the new streets in subdivision plats to fit into the general pattern.

In two other respects, however, the New York legislation was admittedly weak. The first of these weaknesses was that it did not give to the municipality the power which Cincinnati has, for example, to compel developers to install, or to give suitable bond to install, at their own expense and in accordance with the municipality's specifications, pavements, curbs, gutters, sidewalks, water mains, and sewers. If this power were given, any municipality which had the will to do so could effectually stop all premature subdivisions.[11] The second weakness in the New York system was that the powers over planning and platting and zoning had been conferred quite logically on all municipalities alike, on cities and towns and villages. On the margins of rapidly growing cities, however, the town officials too often fail to see the implications in the subdivision activities and yield too easily to local pressure or else are too prone to help such subdivisions along for the sake of the fees accruing to them. In consequence, in the very areas where the subdivision business most needs control, that control is still weakest.

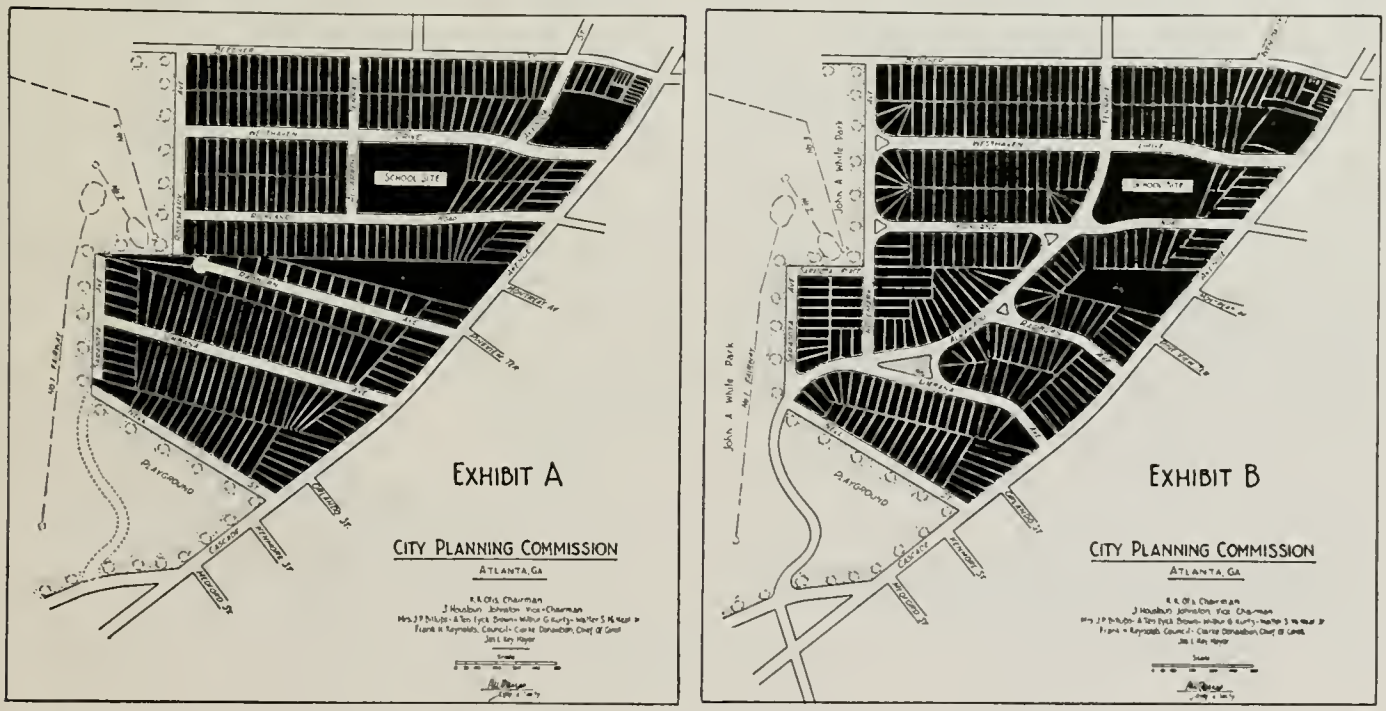
To overcome this situation in New York State, two courses were suggested:

(*a*) Strengthen the present planning laws by permitting local boards to require the installation of appropriate improvements at the developer's expense or the issuance of a bond guaranteeing such installation at a later date upon formal demand by the municipality, or

(*b*) Take away from local town boards which have failed to use them wisely the powers over subdivision and local zoning and vest those powers in a strongly organized county planning and zoning board. The advocates of the latter view argue that either local government must be strengthened or its powers transferred to a body less susceptible to special influences. Contrary opinion challenges the inference that the county board would be likely to be such a body. There is also, of course, a compromise which might be effective. This would involve the creation of a strong county planning board with zoning power to act until the towns elected to avail themselves of the powers previously conferred upon them.[12]

[11] This weakness has since been corrected by a series of new statutes, described in *The American City*, June 1931, pp. 37–39. These statutes are, respectively, for cities (ch. 205, Laws of 1938), for villages (ch. 44, Laws of 1938), for towns (ch. 264, Laws of 1938), (ch. 590, Laws of 1939). See also *Local Planning and Zoning Powers and Procedures in the State of New York*, Division of State Planning, Albany, N. Y., 1939.

[12] The first of these methods was adopted in the new statutes mentioned above, but the second suggestion has not been applied, nor does it appear likely to be because of the strength of the towns in the legislature.




From *The American City* for April 1937

FIGURE 57.—A cooperative triumph in subdivision replanning

Exhibit A shows a subdivision plan for a tract in Atlanta, Ga., and the same tract as replanned by the city planning commission. The revised plan was approved by the Atlanta Real Estate Board and adopted by the five owners of the area. It was found that the commission's plan provided a larger number of good lots and would increase the value of the area at least 10 to 15 percent.

In general, the conservative group upholds the principle of local autonomy and home rule, looks askance at extra-territorial jurisdiction, views with abhorrence overlapping jurisdictions, and is very skeptical about placing any responsibility for zoning in the hands of county authorities.

**The Liberal Viewpoint as to Subdivision Control**

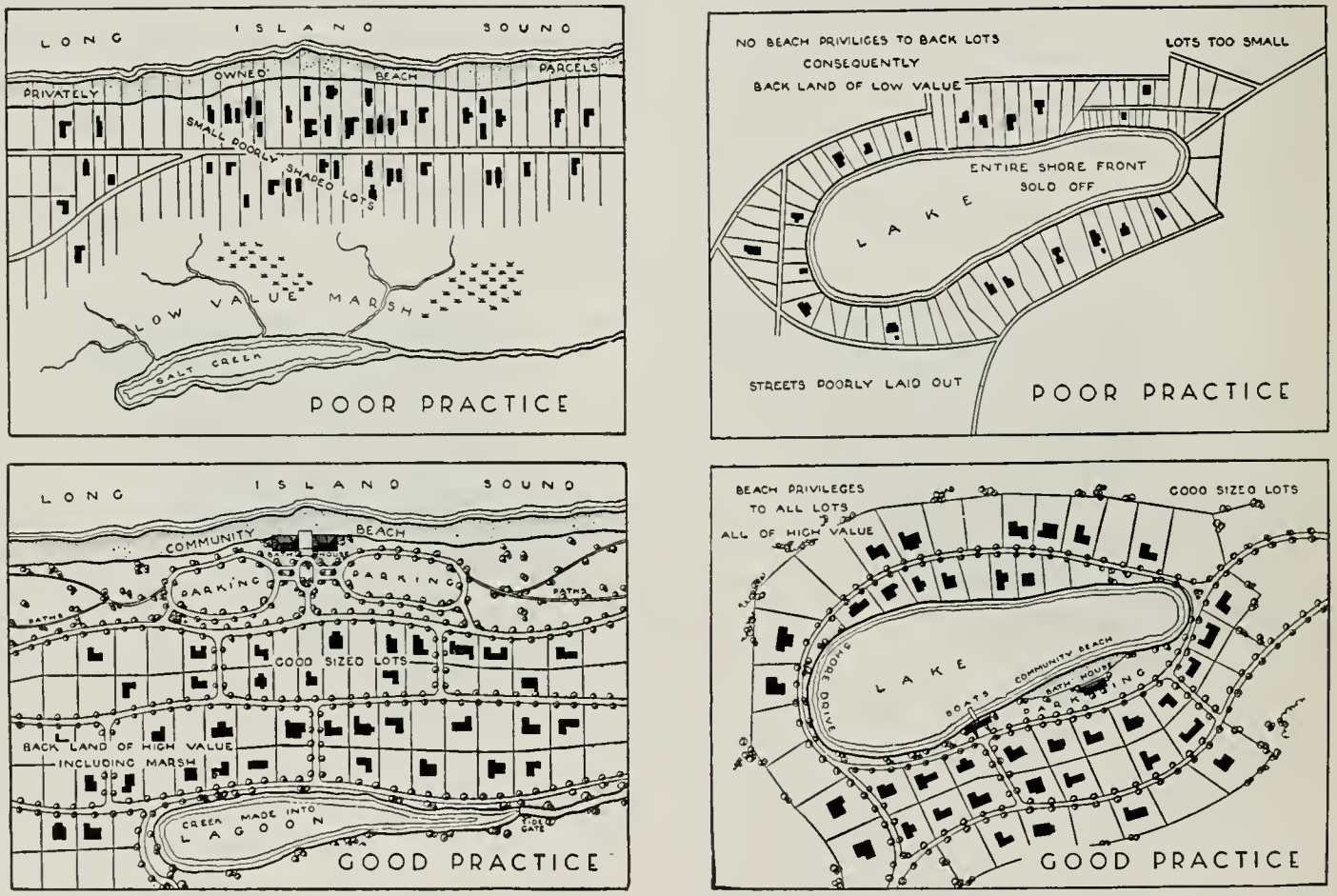
The liberal school, on the other hand, takes the position that we must hark back to first principles, that the institution of private property was established for the social welfare, and that it is a means and not an end in itself.

Constitutional guarantees, they argue, are not intended to prevent any regulation of the use of private property that is clearly essential to the public welfare, where the public purpose involved cannot be practically or reasonably attained by other methods. They urge that we move forward with confidence that a practical way can be found to do the things that are required for the public welfare. "The main thing," said Robert Whitten, "is to know definitely where we want to go, and not to permit thought to be inhibited or action paralyzed by past precedent or supposed legal taboo." [13]

**Curbing the Subdivision Mania**

Fortunately, both conservative and liberal groups agree on one remedy, namely, to confer on planning boards authority to compel the developer to install necessary improvements as a condition precedent to the final acceptance of the plat. There is, however, some difference of opinion as to whether the municipality should be empowered to accept, in lieu of the installation of such improvements or the developer's

[13] A clear outline of "where we want to go" is set forth in an excellent report of a special committee of the American City Planning Institute on the "Control of Land Subdivision and Building Development," published in the July 1928, issue of *City Planning*.




Shore development

Pond and lake development

From *The American City* for May 1937

FIGURE 58.—Subdivision plats before and after revision

These examples of good and poor practice in waterfront development are from studies of the Fairfield County (Conn.) Planning Association

bond in satisfactory form to install them on demand, the alternative of municipal installation and local special assessment. This latter has proved a boomerang in many jurisdictions, because it has involved the municipality in partnership with the exploiting developer and caused untold waste of public funds which can never be recouped.[14]

Extraterritorial jurisdiction has been quite widely conferred on cities on the theory that sooner or later the territory on the periphery of the city would probably be annexed to and become part of the city and that it was in the public interest to control it in harmony with the plan of the city.

[14] Examples of compulsion in the matter of installing utilities may be found in *Our Cities Today and Tomorrow* by Theodora Kimball and Henry V. Hubbard, pp. 151–3. San Mateo County, Calif., requires that all highways, streets, and other ways shall be offered for dedication to public use and *shall be improved by the subdivider*, including construction of pavements and provision of adequate water supply and other sanitary facilities. (*The Subdivision of Land in San Mateo County, Calif., 1932.*) Consult also the Subdivision Regulations of Cincinnati and Hamilton County, Ohio.

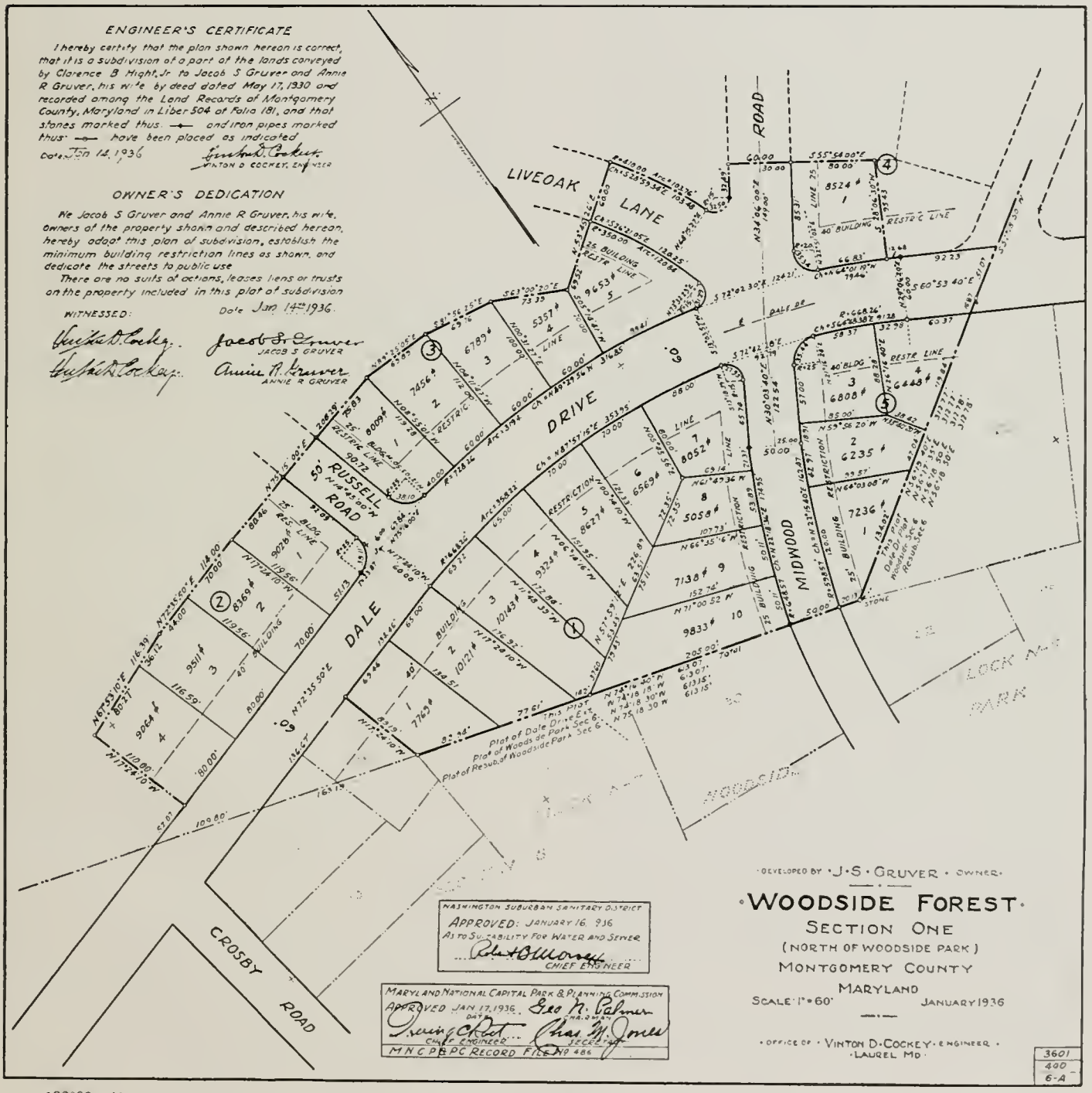



FIGURE 59

Howard K. Menhinick, in gathering data for the book, *Our Cities Today and Tomorrow*, found numerous grants of authority for control of subdivisions outside the corporate limits of the cities visited by him.[15] Its purpose, of course, is to secure control both within and for a sufficient distance outside the municipality to insure stability of development and a reasonable expansion of the utility services. This principle is promoted by the 5-mile requirements recommended in the Department of Commerce Standard City Planning Enabling Act. Nearly half the States authorize municipalities to exercise extraterritorial control of subdivisions.

As county and regional planning develops, there is a natural and desirable tendency to decrease the jurisdiction of the city planning commission when the county planning commission becomes prepared to exercise this control. In Milwaukee County, Wis., Allegheny County, Pa., Glynn County, Ga., and Los Angeles and Santa Barbara Counties, Calif., the platting jurisdiction of the county includes all the unincorporated territory.[16] In Michigan, Wayne County has been so strict in requiring conformity to the Master Plan that Detroit has not had to enforce the 3-mile provision very rigidly. Close cooperation in Hamilton and Lucas Counties, Ohio, exists between the city and county planning commissions in controlling plats. In Des Moines, with a 1-mile limit, voluntary submission by the county engineer of plats outside the 1-mile limit is common. Outside of Oklahoma City's 3-mile limit, many subdividers have asked for approval because it is a valuable sales argument.

#### State Control of Subdividers

A little-known but nevertheless important amendment was made to the public-health law of the State of New York—Chapter 403, Laws of 1933—requiring that "before land platted for subdivision is put upon the market" there "shall be filed with the State commissioner of health a plat, etc." The commissioner may thereupon order, within a specified time as he may deem necessary, the installation, etc., of the whole or any part of the water-supply and sewerage systems. The Monroe County Planning Board has been cooperating with the State health department with respect to this provision and using it as a club to hold off premature subdivisions. A local resolution of the Monroe County Board of Supervisors compels the submission of plats to the county planning board for approval. This also directs the county registrar not to accept a plat without the endorsement of the county planning board. The State health department is cooperating under an informal arrangement by which it withholds approval of plats not acceptable to the county planning board and usually finds through its own studies of them ample reasons for rejecting any which the county planning board disapproves.

There is another new act in New York State (chapter 393, Laws of 1936) aimed to compel the filing of subdivision plats which in the past has often been delayed for months and sometimes years by developers after obtaining the approval of the local planning board. This act establishes a fine of $25 for each lot sold from such map prior to its filing with the county registrar. It may prove effective, if it can be enforced, but there is some doubt of this, as previous efforts to make the sale of land by metes and bounds a misdemeanor have apparently never been enforced.

#### Measures for Reorganizing and Replatting Defective Subdivisions[17]

Where defective or premature subdivisions have been created and have perhaps hung in the market for some time, there is still a chance of replatting and reclaiming them to a more satisfactory use. If no lots have been sold and no street improvements made, street and lot lines can usually be readily obliterated and the property returned to acreage. In different jurisdictions, varying procedures are necessary, entailing action by the local governing body or in some cases by the courts, or merely by the tax assessor and the county clerk or registrar.

But if lots have been sold, the buyers have obtained rights-of-way over the streets shown, and the consents of such buyers to the abandonment of all streets except those needed to give access to their property will have to be obtained before the application for the abandonment of the originally platted streets may be granted. If these consents can be obtained, the only other potential objectors to the abandonment of the street plan would appear to be those who might find it convenient to use the streets of the subdivision as parts of a connecting route between their homes perhaps and their places of business; in other words, as a shorter route than that provided by the existing system. Assuming these objections can be overcome, the procedure would be to select those streets which have to be maintained to give access to the lots already sold or perhaps to substitute new streets in a better layout which will serve them equally well or better.

In such an event, it may be possible to effect a pooling of interests resulting in an exchange of properties and the preparation of an entirely new plat. Generally speaking, the initiative should come from the interested parties, the municipal authorities consenting to a revision of the street plan which will serve the public in-

[15] Pp. 315–316.

[16] In New York and New Jersey, cities, towns, and villages all have equal powers in their respective jurisdictions and annexations are relatively infrequent.

[17] See also discussion of Lex Adickes, section 4 of this report.

terest more effectively. There is, however, no good reason why a public body such as the planning board might not on occasion take the initative, except that such a move puts the developer of the bad tract in a better bargaining position than if the municipality is the one which has to be satisfied.

It is probable that in the next decade the tragic inheritance of tax-delinquent lots from the last real estate boom may force the municipalities, not with the idea of public promotion but of salvage, to wipe out needless paper streets. It may be that we shall see conferred upon municipalities power to step in arbitrarily and cancel such subdivisions, exchanging for individually-owned plots other tax-delinquent lots on streets equipped with improvements, and even moving at public expense to such new sites any isolated dwellings that may have been constructed in otherwise fallow subdivisions. Such procedure may find justification in reduced costs for policing, fire protection, and schooling, as well as in savings on snow removal, street maintenance, etc., in such outlying areas.

The defective subdivisions could then be reclassed as acreage, restored to agriculture under a leasehold, devoted to recreational use as a public park, or to scientific development as a municipal nursery or forest.

## Effect of Intensive Building Development on Land Values

### Effect on Land Values in the Neighborhood

The effect of intensive building development, especially the high elevator building, has been to increase enormously the possible income from a single lot and, consequently, to raise to fantastic heights the "ceiling" for possible speculative land values. High values and assessments of overdeveloped land may be reflected in increased asking prices and assessments of adjacent plots, even though there may be little probability of similarly intensive development thereon.

An example in point is an apartment-house district in Milwaukee where the majority of the buildings are two stories high but where 14 apartment buildings range from 4 to 9 stories. In 1920, the land now covered by these 14 buildings carried an assessment considerably higher than that on the buildings then on the land, indicating a high speculative value. By 1930, the tall apartments erected during the decade had raised the building assessment to over 4 times the land assessment. Thus, a reasonable relationship now exists, showing that the former speculative value of the land had not been too great. However, while the assessment of the land on which the tall buildings are built was increasing by 46 percent between 1920 and 1930, the land assessments of adjacent plots increased by 123 percent. Meanwhile, although new improvements had been made on these adjacent plots, the ratio of building assessment had decreased from a little less than 2½ times the land assessment to barely twice the land assessment. Clearly, speculative hopes, already high in 1920, were even higher in 1930.

During the depression, the assessment on the lower buildings decreased considerably but that on the land only slightly, so that by 1935, the buildings were assessed at only a little more than one and a half times the land.[18] Thus, even the depression did not dampen speculative hopes. We may assume, however, that it became more and more difficult for the income from the buildings to pay taxes on the high assessment. If the owners of the less intensively developed plots do not build tall apartments, taxes will continue to eat up their patrimony. On the other hand, if they build tall buildings, in the hope that they can be rented, the result will very probably be dark and semidark rooms both in their own new buildings and in the existing tall structures, leading toward a lower class of tenants, lower rents, and the beginnings of blight in the district.

The ultimate effect of intensive building development in some districts may be the opposite of that outlined above. An example, likewise from Milwaukee, is found in the principal downtown business district, where above the general 2-story height of structures stand out 79 buildings ranging from 6 to 24 stories. While the assessed value of land now developed with these tall buildings increased between 1920 and 1930 by 80 percent, and of the buildings themselves by 95 percent, the assessed value of the rest of the land in the district actually decreased by 30 percent, while the assessed value of buildings increased only slightly.[19] This decrease in assessed value of the less intensively developed land indicates that the community recognized that part of the speculative value attached to these parcels had been wiped out by the provision of large amounts of business space on adjacent lots.

In general, upward expansion is always at the expense of horizontal expansion. Where the upward expansion of a business district more than takes care of additional demand for commercial space, the commercial core of the city tends to shrink away from surrounding blighted areas, leaving an ever-wider swath of slums and blight. Although this may result in some deflation of excessively high speculative land values, the price of land in interior blighted areas is almost always still too high to permit profitable development of medium- or low-priced housing, even in multifamily

[18] Data based on special tabulation of assessed valuations furnished to the National Resources Committee by Charles B. Bennett, city planning engineer, board of public land commissioners, Milwaukee. Assessed valuations in Milwaukee are reported to vary between 70 percent and 100 percent of market value, averaging about 85 percent.

[19] *Ibid.*

buildings. A comparison of the assessed value of land and buildings in interior blighted districts of representative American cities with typical assessed values of land in other sections of those cities shows that, in all but exceptional cases, the only types of development that can be expected to clear and replace blighted areas, at present land prices and without subsidy, are high-class apartment houses and medium- or high-class business or commercial enterprises. In most cities, unfortunately, the additional amount of land needed for these uses is only a small proportion of the whole and subject to limited expansion.

**Effect on Land Value in the City as a Whole**

It should be more generally recognized that intensive building development on certain plots of a city, with attendant abnormal increases in prices of these and often of adjacent plots, does not of itself increase the total value of all land in the city. Overcrowding the land with tall buildings is usually the result and not the cause of increase of population or wealth. Although excessive crowding together of offices, factories, shops, and homes may decrease the time and cost of necessary transportation within a city, it invariably causes an increase in costs of building construction and maintenance, including elevator service, and city-wide fire protection, traffic regulations, health and social services, and many other accompaniments of urban congestion. The increasing costs of congestion are paid by the citizens of the city out of their total income; and insofar as net income is thus decreased, it tends to lower total wealth and land value.

To quote from the *Regional Survey of New York and its Environs:*

Allowing for all factors, it is questionable if high buildings create more land value than they destroy, even in their own

FIGURE 60.—St. Paul off-street parking

neighborhood. Over wide districts their effect, in the aggregate, must be to depreciate values in proportion as they retard reconstruction of old buildings, reduce the demand for land by using air rights, and cast a shadow on other buildings.[20]

The excessive heights and bulks allowed by most zoning ordinances place the stamp of approval of the community on the undesirable overdevelopment of some plots and the consequent underdevelopment of others, with attendant inequitable distribution of land values and assessments for taxation purposes. More strict height and bulk provisions would tend to reduce permitted densities, and, as one observer has said:

Experience has amply shown everywhere that to reduce densities does not diminish land values, but only distributes land values.[21]

As long ago as 1912, Sir Raymond Unwin pointed out, in his monograph, *Nothing Gained by Overcrowding*, that—

The greater the number of houses crowded upon the land, the higher the rate which each occupier must pay for every yard of it which his plot contains, the smaller will be the total return to the owners of land in increment value, and, indeed, the less will be the real economy in the use of the land. * * *

It seems to me that in matters of this kind it is obvious duty of the community to provide for the right system of development, and not to be turned aside because of hardships that may fall upon a few individuals who have laid their plans on the assumption that they would continue to be allowed to do something which has proved to be detrimental to the community. The fact is that nobody can acquire a prescriptive right to injure the community.

### Parking Lots

One of the outstanding effects of the building boom of the 1920's in the central areas of cities was the mushroom growth of skyscrapers. The depression of the 1930's, on the other hand, witnessed in most cities the rapid multiplication of parking lots close to the tall buildings. In downtown Detroit, for instance, the 110 privately-owned parking lots in 1927 had increased to 265 by 1933, and the car capacity from 7,720 to 17,251, reaching, in 1936, a total of 31,724 (including downtown garages). In Milwaukee, the car capacity had increased from 3,080 in 1927 to 9,009 in 1935.[22] Similarly, in Washington, D. C., the number of parking lots in the central area increased from 28 to 95 between 1930 and 1935, and the car capacity from 743 to 6,561.[23] A similar trend is undoubtedly observable in major cities throughout the country.

Authorities differ as to the desirability of the increase in downtown parking lots. Some point to the good effects of demolition of obsolete buildings, the much-needed open spaces in central areas and the greater convenience to motorists, who, they say, are coming in increasing numbers to downtown stores, offices, and theaters.

Others, however, deploring the increase in parking lots, point to the serious competition with street cars and buses, which, in some cities, has caused a decrease or even abandonment of mass transportation services, resulting in street congestion from private automobiles and in considerable inconvenience to persons unable to afford such individual transportation. The decrease in ratables also should be mentioned, even though the revenue from parking lots may pay taxes on property that would otherwise be delinquent. It is feared by some that the invasion of the unsightly parking lot into high-class retail districts will lower land values, although only a narrow strip of trees or planting next to the sidewalk is required to hide the cars effectively and create much-needed greenery in our dreary city streets. A few prophets of gloom look upon the parking lot as the first sign of the inevitable deterioration and abandonment of central areas.[24]

Most owners of parking lots in central areas of high-land values look forward to the eventual improvement of their property to the point where it will show a return on land prices which, in relation to reasonable expectancies of city growth, are purely fictitious. The continued lack of demand for vacant downtown land except for parking may aid in gradually reducing inflated land prices.

The large amount of vacant land in the central areas of our cities offers opportunities for reorganization, replanning, and rational rebuilding that should not be overlooked. Present areas now used for parking lots should be taken into consideration in redesigning street systems, providing open spaces, overhauling zoning ordinances, assessing property for taxation, and adopting other policies tending to prevent deterioration and to lead toward the more rational development of highly congested central areas.

### Building, Sanitary, and Other Codes

The importance of building, sanitary, and other codes as factors in a comprehensive urban land pol-

[20] Volume II, p. 158.

[21] Parker, Barry, "The Improvement of Towns by the Creation of Open Spaces in Them and by Moving Industries Out of Them." *Decentralization of Population and Industry*, Herbert Warren, ed., London, 1930, p. 103.

[22] Blucher, Walter H.: "The Economics of the Parking Lot" in the *Planners' Journal*, September–October 1936.

[23] McClintock, Miller: *A Report on the Parking and Garage Problem of the Central Business District of Washington, D. C.*, 1930. *Map of Parking Facilities and Limited Time Parking Areas, Central District, Washington, D. C.*, May 1935.

[24] For a recent study of this subject, see *the Parking Problem in Central Business Districts, with Special Reference to Off-Street Parking*, Public Administration Service, Chicago, Ill., 1938.

icy is very inadequately understood. Blighted areas and slums cause much concern; and yet, in seeking a remedy for them, one of the chief reasons for their being—inferior materials and shoddy construction—is generally ignored. When cheap jerry building is permitted, it is not at all surprising that the cost of repairs and maintenance should exact such a drain upon the income of the owner as utterly to discourage him. As long as the owner possesses a steady job at a fair wage, he may manage to meet these exorbitant demands by whittling down his standard of living in various other ways; but financial setbacks resulting from illness, unemployment, or reduction in wages may result in an accumulated need for repairs such as seriously to depreciate the basic values of the building. Allow these forces to affect simultaneously numerous buildings in the same neighborhood, and we have the beginnings of a blighted district or a slum.

Astonishing as it may seem, there are actually hundreds of fair-sized municipalities which have no building codes at all, and many more hundreds which have such poorly devised codes that they are little better than none. In some cases, it would almost appear that the jerry builder himself, in order to forestall attempts to stop his type of construction, has drafted the local codes. In such cases, much to the discouragement of reputable builders in the community, the code actually legalizes jerry building. At the other extreme we find in some codes restrictions which increase construction costs far beyond reasonable requirements for safety and durability.

Quite commonly the charter of a city requires that all ordinances be advertised in full two or three times in the course of their passage and adoption. In such cases, the adoption of an adequate building code might involve an advertising expense of thousands of dollars. This expense stands between many cities and the adoption of adequate codes. The suggestion has been made that in the adoption of building codes, sanitary codes, electrical codes, and plumbing codes, a city be permitted to advertise the ordinance by its title only, in order to obviate such useless expense.

Some question has been expressed as to whether the urban unit is a satisfactory basis for a building code. The adoption of a code by the central city still leaves the suburbs with either no codes at all or codes of varying degrees of adequacy. County codes, regional codes, or even state-wide codes would standardize construction over substantial areas and make for more uniform competitive conditions in the building field.

### Effect of Private Restrictions on Property Uses

There are many things that zoning cannot do. A zoning ordinance may not legally consider matters of an aesthetic character, except incidentally, and yet such considerations may be of great interest to the community. The architectural design of buildings, restrictions as to the materials entering into the construction of buildings, requirements limiting the minimum cost of buildings, and many other intricate matters affecting the amenities of a city would no doubt, if adequately controlled, produce a more attractive residence neighborhood; yet all these considerations lie outside the scope of the police power, as generally interpreted, and therefore beyond the control of zoning. Such matters may only be controlled through restrictive covenants running with the land.

There probably will always be a sphere for such covenants in high-class residential developments. If shacks are to be effectively prevented, there will be need for a requirement limiting the minimum cost of buildings. The same applies to matters relating to architectural design, tiled roofs, the color of houses, and similar matters. These are not matters for the city itself to undertake officially; if they are done at all, they must be accomplished through contractual relations between the owners themselves, although some authorities seem to think that the municipality may properly be made an interested party looking to the enforcement of the covenant once it has been entered into.

The superiority of zoning over private restrictions lies in the fact that zoning regulations run neither in perpetuity nor for a fixed term of years. In other words, the zoning regulations only continue for as long a time as they remain unchanged. This supplies the needed elasticity and flexibility not afforded by restrictive covenants. Servitudes running in perpetuity with the land frequently accomplish a result directly contrary to what is desired. With the lapse of time, restrictive covenants may, instead of promoting the best interests of a locality, actually hold back its proper development.

Restrictions for a fixed period are scarcely better. They bear no relationship in their duration to the length of time that a locality needs protection. Indeed, frequently when a section needs protection most, the restrictions lapse, leaving it unprotected. Towards the end of the restricted period, moreover, property owners do not know what will happen upon the termination of restrictions. Owners of vacant land tend, therefore, to keep their property out of use, rather than risk developing it in accordance with the restrictions, for fear that upon their termination the neighborhood may be exploited by out-of-place buildings. Persons owning improved property, fearing what the future may have in store for them, refrain from carrying out permanent improvements and thus permit their buildings to run down.

Within its limited scope, zoning possesses all of the advantages and none of the disadvantages of restrictive covenants. It is able to protect every locality for the length of time it needs protection. When it no longer needs protection, the regulations or zones can be changed by the authority having power to amend the zoning ordinance to meet the changed conditions. The area zoned in a certain manner may, moreover, be laid out so as to be coterminous with the natural area requiring a certain type of protection. Under private restrictions, there is nothing to prevent owners of land adjoining restricted localities from developing their property with an inferior type of building for the purpose of exploiting the superior type of development across the line within the restricted area.

# PART III—SECTION 4

# NEIGHBORHOOD PLANNING AND THE REHABILITATION OF BLIGHTED AREAS AND SLUMS

It is becoming generally recognized that the owners of small parcels of property are helpless before the forces of neighborhood disintegration and that planning technique must be extended to aid them and through them the community. Despite considerable variance in opinions and proposals, all agree that more efficient planning, development, and control of residential areas can produce substantial economies to the occupants and owners of property and to the municipality. It is not within the province of this report to detail the valuable researches that have been conducted in this field. The most important have been those conducted by the Harvard School of City Planning under Thomas Adams, and those of Clarence Arthur Perry, Arthur C. Holden, Henry Wright, Robert Whitten, Harland Bartholomew, Noulon Cauchon, and Barry Parker.[1]

Harmonious neighborhood development, as an important factor in stable investment, has been officially recognized by the Federal Housing Administration under title II of the National Housing Act. Applicants for mortgage insurance are informed that neighborhoods which are attractively planned, harmoniously developed, and protected by well-drawn and strictly enforced zoning regulations and proper deed restrictions will receive the most favorable consideration.[2] Assuming that the qualities which produce a satisfactory social condition also tend to assure economic soundness, the Federal Housing Administration has focused the attention of lenders and builders on avoidance of environmental conditions that exercise, in considerable degree, those disintegrating influences which are as certain to destroy property values as defects in the buildings themselves.

Dwellings which seek mortgage insurance must be situated in a neighborhood of a homogeneous character, which offers security against decline in desirability due to the encroachment of inharmonious land uses. To be eligible, the property should also be accessible to suitable employment areas, market centers, and schools. In addition, the Federal Housing Administration has developed a method of unit evaluation for appraisals which includes an elaborate estimate of neighborhood conditions.

There is no doubt that these standards will have a salutary effect upon lenders generally in establishing and maintaining desirable neighborhood conditions. Popular education on the subject is bearing fruit, and many subdividers are beginning to apply to their plans the principles discovered.

Lending institutions are increasingly recognizing good neighborhood environment and zoning control to the extent of offering lower mortgage rates to property in such districts than in less-protected communities. A reduction of one-half percent interest may mean more than a 10-percent reduction in building cost in its effect upon rent or carrying charges. The importance of stability of investment in producing lower carrying costs is thus forcefully illustrated.

This, in brief, is the situation. What then is a practicable planning unit? Upon what basis are such units to be established? How may they be planned and how may the plans be put into operation?

### The Neighborhood Unit Proposal

The growth of the city created the need for replacing the lost social unity of the small village. A significant attempt was made in 1907 in Rochester, N. Y., in the movement under the leadership of Edward J. Ward, to establish the school as a neighborhood center. Mr. Ward characterized the idea as "the restoration to its true place in social life of that most American of all institutions, the public school center, in order that through this extended use of the school building might be developed, in the midst of our own complex life, the community interest, the neighborly spirit, the democracy that we knew before we came to the city." With the organization of the National Conference on Community Centers, the movement took on national significance. A study by Clarence Arthur Perry [2a] grew from this movement and has proved to be a most important contribution to the concept of the neighborhood unit as a planning principle.

A neighborhood unit, as defined by Mr. Perry, is an area of a town usually bounded by main traffic roads without any main traffic routes passing through it.

[1] More recently this problem has been studied by technicians of the U. S. Housing Authority and of various local authorities, and by local planning commissions as well as by civic groups such as the Citizens' Housing Council of New York.

[2] Federal Housing Administration, Circular No. 2.

[2a] *Regional Survey of New York and Its Environs*, vol. VII, monograph 1, pp. 22–141.

The school is its basic feature, together with all neighborhood recreation and shopping facilities necessary for a self-contained residential unit. It has quite definite boundaries and is planned and controlled as a unit. The quality of its residential environment is dependent, partly at least, upon the fitness and harmonious play of these factors. It has been described as a satellite form of development either within or outside the town itself.

The advantages claimed for planned neighborhood units are:

1. Safety from automobile traffic and relief from waste due to traffic congestion.
2. Civic benefits resulting from natural growth of social movements through ease of communication among residents.
3. Municipal economies through savings in street area and preservation of the best and most stable use of publicly provided schools, playgrounds, utilities, etc.
4. Stability of property values due to greater control over disintegration and encouragement of beneficial elements.
5. Provision of recreation space at minimum cost to city or developer through saving in street area.

Certain proponents of neighborhood planning insist that the concept of the "neighborhood unit" is applicable to all types of residential districts; that the principle of a residential district, self-contained as to major services, is just as necessary for desirable living conditions to the high- as to the low-income groups. They contend, further, that the benefits possible through large-scale neighborhood planning have as yet been enjoyed by no stratum of the population nor by the municipality, except in a few isolated places. On the other hand, two types of objections have been raised to the neighborhood unit concept: First, that it calls for the arbitrary division of the city into social and physical cells which have no basis in present or future community life; and, second, that it is an unattainable ideal, because of insurmountable social and economic obstacles. Agreement, however, is general that greater powers of control than are now at hand are desirable to insure the maintenance of stable neighborhood environment.

**Examples of Planned Neighborhoods** [3]

There are no examples in the United States of neighborhoods planned strictly on the principles outlined by Mr. Perry. A number of subdivisions and small towns have been designed with some attempt made to satisfy neighborhood requirements. For the most part, they have been confined to medium priced or expensive home districts.

Some of the better examples are: Kansas City, Country Club district; Baltimore, Roland Park and Guilford; Cleveland, Shaker Heights; Washington, Wesley Heights; Dallas, Greenway Parks; New York, Forest Hills Gardens and Sunnyside; Pittsburgh, Chatham Village.

The three "Greenbelt towns" of the Suburban Resettlement Division of the Resettlement (Farm Security) Administration are most interesting because they will all accommodate a population closely approximating that recommended for Mr. Perry's neighborhood units, i. e., 750 to 1,000 families. Planned for a lower density than would be practicable in a city neighborhood unit and with a surrounding green belt forming definite boundaries, they embody the principle of separation of residences from main traffic arteries. Footpaths through parks and underpasses at

[3] For a more detailed discussion, see *Planned Communities*, by Arthur C. Comey, infra.

FIGURE 61

important crossings reduce the traffic hazard for children. Already, this effort at large-scale planning is beginning to influence private developers on Long Island and elsewhere.

The town of Radburn, N. J., closely approximates the planning principles of the neighborhood unit. Frankly designed as a "town for the motor age," it provides for a self-contained community of superblocks. Through traffic is separated from local, and a system of footpaths and underpasses makes is possible for children to get to school without crossing a traffic thoroughfare.

In England, large-scale planning has been more common, partly because of the greater ease of acquiring large plots conveniently located. Where experience has thus been gained, it is becoming more generally recognized that the principle of self-contained neighborhood units are a desirable element of a town plan.

Becontree, near London, an immense housing area accommodating 120,000 people, is divided into units each of which is provided with its own school. Becontree, however, in common with many English housing developments, lacks adequate provision for community activities. This lack is now becoming recognized, and steps are being taken to correct it. Nottingham, Hampstead Garden Suburb, and Barry Parker's plan of Wythenshawe (Manchester), all in England, represent a very close approach to the neighborhood unit principle of planning.

Wythenshawe is divided into large sectors bounded by traffic routes of the parkway type with rights-of-way averaging 300 feet in width; each sector is designed to contain a "neighborhood unit" of housing with a school, playground, and church near the center, thus making it unnecessary for school children to cross a main traffic artery. Shopping centers are placed at the juncture of four neighborhoods on secondary roads, which locates them a maximum of three-eights of a mile from any point in each neighborhood. When completed, the town will accommodate 100,000 people. All areas have been planned and zoned in advance. Specific sites have been allocated for housing, shopping centers, schools, churches, and nonnuisance types of industry on the leeward side of the town. An agricultural belt of 1,000 acres has been provided, and carefully selected open spaces comprise another 1,000 acres of the 5,500-acre tract. The traffic arteries were designed along modern concepts, providing for continuous traffic flow. Included in the street system are some hexagonal units which offer a saving of 10 percent over the gridiron system. Indications are that much of England's future large-scale housing will be influenced by the Wythenshawe plan.[4]

[4] *The American City*, November 1936, pages 46–49.

**Organization for Neighborhood Planning**

The mayor's committee on city planning[4a] of New York has devoted considerable attention to neighborhood planning. In a booklet, *Planning Your Community*, the late Bernard S. Deutsch, chairman, stated that "from a city planning point of view the metropolis is a cluster of local communities both dependent upon, and at the same time, exercising an important influence over the character and development of the city as a whole. If this is so, the neighborhood within the city may well lay plans for its future at the same time the broad plan for the greater city is being prepared; just as cities, counties, States, and federal agencies are even now planning simultaneously, to their great mutual advantage."

The booklet, although lacking in a definition of what is meant by neighborhood, outlined the first steps which should be taken preparatory to making a neighborhood plan.

The city of Boston falls more naturally than most cities into a number of communities ranging from 20,000 to 200,000 population with definite natural and social boundaries. A local joint planning committee has been set up for each district to cooperate with the city planning board on problems of blighted areas and housing, in the planning of new public improvements, and other matters.

Application of the neighborhood unit idea to subdivision planning is mainly a matter of education. When developers have learned of the advantages of this system through examples of successfully planned neighborhoods, they will soon begin to apply its valuable principles to their plans. The accent placed upon investment rather than speculative returns from housing developments will undoubtedly result in increased consideration of long-term values. This means economy through large-scale planning, protection of neighborhood services, and protection from inharmonious influences through rigid restrictions, all serving to create a stable neighborhood population and continuing economic advantage.

Application of the neighborhood unit principle to developed portions of the city raises a host of problems that have only begun to receive serious study.

**Group Action Proposals**

In the last few years, there has been some discussion of proposals which aim to bring about the rehabilitation of blighted and slum areas through group action initiated and executed primarily by the owners and others interested in specific areas, rather than through the initiative and activity of city, State, or Federal agencies. The various proposals usually tend to indi-

[4a] Now superseded by the official City Planning Commission.

cate the direction such group action should take, rather than define the exact technique. In general, the methods may be classified as follows:

1. The formation of a private corporation, in which the owners in a block or area voluntarily pool their interests and to which the owners convey title to their properties in return for stocks or bonds of the corporation. A variation of this scheme involves the voluntary conveyance of the interests of all the owners of a block or area to a trust company which issues certificates of interest in a trust to the owners, with broad powers in the trust company and a board of managers to manage the property and to construct new housing under the direction of specially qualified managing trustees.

2. The formation of a corporation similar to that first described, except that it may be given (a) governmental assistance in the form of a guarantee of its bonds or the loan of government funds, and (b) governmental powers, such as the power of eminent domain. Such corporations would be subject to governmental regulation.

3. The incorporation, upon the initiation of a large percentage of the owners in the district, of a neighborhood protective and improvement district as a new political subdivision in a city. The district would be given eminent domain, and perhaps taxation and police powers, subject to certain limited supervision and control by municipal agencies.

A number of suggested procedures which fall within the scope of the foregoing classification are discussed elsewhere [5] in detail and at greater length than is permitted by the limitations of space in this report. Two of them are chosen for discussion herein as the leading examples of the thought of those active in this field.

### Proposal of the New York Building Congress

The Land Utilization Committee of the New York Building Congress, of which Arthur C. Holden is chairman, has gathered and analyzed data showing the financial and physical conditions of a large number of properties in slum areas in New York City. These studies fortify the well known fact that individual owners or mortgagees in slum areas cannot alone reduce the wastes of present operating costs or bring about improved land use in the districts in which their properties are located, the removal of obsolete buildings, or the modernization or replacement of the other buildings.

Although the neighborhood is recognized as a desirable district for cooperative activities, the drawbacks in dealing with such districts have led the proponents to concentrate on the feasibility of group action in single city blocks. They assert that their tentative recommendations are also applicable to larger districts, and to blighted as well as slum areas.

The suggested procedure for group action involves the formation of a corporation to which each owner conveys his property. In return, he receives corporate stock representing the same ratio of value to the total number of shares as the value of his property bears to the total value of all the properties. Preferred stock may be issued on the basis of the ratio of the income from one piece of property to the total income. Common stock may be issued on the basis of the ratio of the respective appraisal or equity values. These procedures seek to eliminate the present almost insuperable difficulty involved in any attempt by any one organization or agency to acquire all the property in a district for cash. The ratio-valuation method is designed also to eliminate the difficulty in agreeing on a specific money value for each parcel of property. An economic analysis of each parcel furnishes the basis upon which the pro-rata valuations can be computed, but the mathematical computations suggested are intricate and may well lead to as much difference of opinion as to whether or not the resulting prorations are equitable as any attempt to agree on an outright money valuation of each parcel.

The sponsors foresee a step-by-step program rather than a sweeping demolition program followed by the total reconstruction of an area. The initial step in cooperative action might be under an agreement by which one manager would handle all the properties in a single block in order to obtain operating economies and to reduce the conflicts of interest between adjoining property owners. After the formation of the cooperative corporation, nuisances and obsolete dwellings could be demolished, thus giving light and air, and space for parks and playgrounds. Some of the houses could be temporarily renovated. The credit of the corporation could then be used to finance the complete modernization of one or more units or perhaps the construction of a new unit upon vacant space. Conceivably, this step-by-step process would continue until all obsolete dwellings were replaced by modern structures.

The greatest obstacle to successful group action is the human element. It is unlikely, where any substantial number of interests are involved, that all the owners will agree. Hold-outs, personal antagonisms, distrust, the elimination of speculative possibilities, and the risks involved in being a minority stockholder, all make the chances of unanimous cooperation extremely slight. And unanimity is a prerequisite in all but the exceptional cases.

[5] *Urban Blight and Slums*, by Mabel L. Walker and others, chapter on "Proposed Rehabilitation Procedures," by Ira S. Robbins, pp. 207–240, Harvard University Press, 1938.

The existence of mortgages on some of the properties in a joint venture of this kind complicates its consummation. Institutional mortgagees and fiduciaries are prohibited by law in most States from accepting stocks in lieu of their mortgage liens. Furthermore, if additional funds are to be provided by the mortgagees to carry out the program, such mortgagees are subject to the limitations of law with respect to the percentage that the amount of the mortgage must bear to the value of the property. Nor can such mortgagees subordinate their interests to any mortgage given as security for additional funds from other sources. The provisions in most mortgages to the effect that they become due if any buildings or improvements are demolished without the consent of the mortgagee may hinder the execution of the cooperative plan.

Recent legislation in New York State permits savings banks and other fiduciaries to avoid the foregoing restrictions:

The formation of the Savings Banks Trust Company and Institutional Securities Corporation, formed with the approval of the Banking Board of New York State was ratified by Laws of 1934, Chapter 255, which added Subdivision 14 to Section 238 of the Banking Law of New York State and the powers of this trust company and mortgage company respectively were broadened by amendments to Subdivision 14, by Laws of 1935, Chapter 687. The substance of the section provides that the Banking Board may authorize savings banks (1) to subscribe to capital stock, capital notes, and debentures of any trust company and of any corporation organized pursuant to the laws of this State, to create a market for mortgage loans and obligations where the stock of all of such trust company or corporation is owned by not less than twenty savings banks of the State. The savings banks may pay for such stock, notes, and debentures in mortgages, interests therein or other property, not in excess of an amount approved by the Banking Board, (2) to receive and hold any participation certificate or any other form of participation, though junior in interest, issued by any such trust company in its individual capacity or as trustee, or by any such corporation, and representing participation in first mortgages assigned by the savings banks in payment of capital stock, notes, or debentures of the trust company or corporation, or assigned in connection with the sale of mortgages by the savings banks to the trust company or corporation, and to service any such mortgage in which the savings bank has such participation, (3) to transfer to such trust company, as trustee or agent, for the purpose of liquidation, discharge, readjustment, improvement or rehabilitation, for the account and at the expense of the savings bank making such transfer, any property, security, investment, bond, mortgage or other security of whatever character and without regard to the provisions of law relating to the investment of moneys on deposit in savings banks, to take and hold such trust-company certificates of deposit therefor and any resulting income, money, property, security, bond, mortgage, or investment arising out of the management, liquidation, readjustment, improvement, or rehabilitation of the transferred property, security, investment, bond, mortgage, etc.

The original primary function of the two corporations was to provide a source of liquidity supplementing that of individual banks in time of financial strain. The banks were enabled to borrow from the Saving Banks Trust Company, upon giving collateral, or to sell mortgages to the Institutional Securities Corporation. The two corporations also performed services relating to investments, mortgage servicing, and a mutual savings bank fund, not relevant to this discussion. Of particular interest, however, is the power and practice under which the trust company can take a mortgage, modernize the property for the present owner, accept a second mortgage to secure the moneys advanced for the modernization, and assign both mortgages back to the bank, which may take and hold them even if the loan is in excess of the sixty percent legal limit. In other words, this section of the law removes many restrictions otherwise imposed on saving banks with respect to the nature of their investments and the length of time which they may be held, provided that the operations are conducted through the instrumentalities described in the law.[6]

Even without special legislation, the mortgagees may promote group action through the rearrangement and rewriting of existing mortgage agreements. The mortgagees in different blocks or districts may exchange their mortages so as to lessen the diversity of mortgage interests in any one block and hence accelerate the possibility of group action.

The Land Utilization Committee of the New York Building Congress points out that the mortgagees can do more than cooperate. The mortgagees might even take the lead in forcing cooperative action by the owners.

General legislation is needed in all of the states which will encourage all forms of mortgagees to deposit mortgages with a trustee with special powers to act in cases where it is to the advantage of mortgage investors to promote a combination of interests for the rehabilitation of a blighted area.

Though the pooling method of land assembly by group action eliminates the necessity for cash payment for the land, it does not necessarily lower the capitalization of the land in the project. Although the probabilities are that it permits lower rentals than would otherwise be possible where land is high-priced, there are clear indications that the rents to be charged in housing accomodations available after the execution of a pooling plan will exceed those charged in the accomodations previously available on the same site. This, in itself, is no objection to the execution of a large number of block reorganization enterprises along the lines herein discussed. However, the fact that rents will be higher limits the economic and social usefulness of the plan for two reasons. The first is that it deprives those within the lowest income groups of housing ac-

[6] Quoted from *Urban Blight and Slums* (note 5, supra). A series of articles by Charles A. Miller, president of the Savings Banks Trust Company, describing the work of the trust company and of the Institutional Securities Corporation, has been reprinted from the bulletin of the Savings Banks Association of the State of New York and may be obtained from the trust company at 14 Wall Street, New York City. New York Laws of 1937, Ch. 886, eliminates some of the restrictions placed on insurance companies, executors, trustees, and other fiduciaries, as well as savings banks.

commodations and makes no provision for rehousing them. The second is that it creates new accommodations for those income groups which are normally fairly satisfactorily supplied with new or fairly new housing by the operations of private enterprise. It is economically impossible to transfer successfully practically all of the low-rent housing accommodations into dwellings for a higher-income group. Thus, the emphasis in group action of the type under discussion must be placed upon its ability to rehabilitate a slum or blighted area rather than to provide low-rent housing, and the limitations in the extent of its practical applications must be recognized.

Though the procedure does not contemplate extensive modernization of slum buildings rather than new construction, such modernization seems to be an essential element in the plan. To this extent, it will not receive the support of those who believe that modernization of old law tenements, such as exist in New York City, is not economically feasible, and of those who believe that the slums should be ignored until the blighted areas in the same city are successfully protected and improved, or of those who believe that a successful attack upon slums requires the credit and sweeping powers of a governmental agency, which will demolish existing structures and reconstruct the area. From the point of view of the city planner, the procedure is objectionable in that it does not consider the effect of the cooperative venture upon adjacent areas or its suitability in the light of proper city planning.

Nevertheless, we believe that experiments along the lines suggested by the Land Utilization Committee of the New York Building Congress should be undertaken, as well as along any other lines which appear to be feasible, practical, and not too objectionable for social, economic, or planning reasons. To date, there has been no such attack on our slums by any method whatsoever. If we are fastidious and exacting in our demands that any suggested procedure appear perfect on paper before practical application is attempted, no progress will be made at all.[6a]

**Proposal of the National Association of Real Estate Boards**

The National Association of Real Estate Boards has sponsored a proposed state statute authorizing the creation of neighborhood protective and improvement districts by property owners in cities, towns, and villages.[7]

The proposed statute was not introduced in any legislature, but was the subject of discussion by persons interested in the subject. After further consideration by its sponsors, in the spring of 1937, a revised suggested State statute called "The Neighborhood Improvement Act" was formulated, and was introduced in the Missouri legislature, but was not acted upon. The same proposal was passed by the Michigan legislature but was vetoed by the governor in June 1937.

In general, the proposal is for official organization of the residential areas of a city into neighborhoods, each with its own board of trustees. The city planning commission would determine the general plan as well as the boundaries of each neighborhood. A plan for the future development of each neighborhood would be prepared by the trustees with the aid of the city planning commission. Close and continuous study of trends and of needs would thus stimulate both public and private improvements. Higher standards of zoning regulations would be sought in many neighborhoods. There would be improved maintenance of both public and private property and an increased use of trees and shrubs. Maintenance of restrictions might be reestablished or new ones adopted. This proposal applies the principle of the community associations found in many modern subdivisions to all the residential areas of a city and adds certain public sanction for enforcement. In the opinion of its sponsors, it would serve to protect newly developed areas, would encourage rehabilitiation of blighted districts, and would furnish the basis for reconstruction of slums. To what extent this procedure can succeed in stimulating self-help in neighborhoods without unnecessarily duplicating functions of existing municipal government remains to be demonstrated. Any sound measure which can arouse continuous and wisely directed group action of citizens for higher standards of maintenance in established residential areas has great potential usefulness.

Inasmuch as the new proposal has so recently appeared, we are not in a position to discuss its merits or demerits in detail. That the proposal still falls short of the ends sought is the opinion of a committee of the American City Planning Institute, expressed in a report dated May 25, 1937.

**Lex Adickes**

In many cities, a frequent cause of slums and blighted areas can be found in part in the faulty layout of streets and lots when the area was first put to urban use. Among the specific conditions leading to undesirable living conditions are narrow, crooked streets; dead-end streets and alleys; poorly shaped lots, too narrow, too deep, or too small for building sites; and lack of reserving adequate open spaces. In

[6a] Since this was written, the proposals discussed have been studied further by committees of the New York Building Congress and of the Merchants Association of New York. Information regarding proposed legislation based upon these studies may be obtained from Arthur C. Holden, 670 Fifth Avenue, New York City.

[7] *A Proposed Statute for Neighborhood Protective and Improvement Districts*, published by the National Association of Real Estate Boards, Chicago, Ill. (1935). This proposed statute is modified somewhat in a pamphlet of the same organization, December 1937.

recent years, methods of correcting these defects through pooling and replotting of land, both in built-up areas and in vacant or sparsely built subdivisions, have been discussed, usually in connection with the Lex Adickes.

Strictly speaking, Lex Adickes refers to a law promulgated in 1902 for Frankfort-on-Main, Germany, which was named after the mayor of the City, Dr. Adickes. This law was one of the first of a number of similar statutes and ordinances which eventually applied the principle of compulsory pooling and replotting of land to practically all German cities. It has been repeatedly used in several German cities when a section of unbuilt land, often divided into a large number of small, awkwardly shaped, agricultural holdings, was laid out for urban development. Initiative may come either from the municipality or from a stated portion of the property owners, usually, one-half, provided they own at least half of the area scheduled for replotting. Plots already built on may be excluded from the redistribution.

A commission appointed by owners and public authorities is empowered to carry out the work. After the land, including that in superfluous roads, has been pooled, a plan is prepared laying out streets, squares, parks, and other public spaces. In Frankfort, the municipality obtains for public purposes without cost up to 35 percent of the total area when it takes the initiative itself, or up to 40 percent when the proposal for replotting comes from the owners. After the public spaces have been dedicated, the remainder is redistributed as building sites among the owners, in proportion to the original area and value of their holdings and as close to their former holdings as possible. Holdings too small for building sites are, if possible, sold to owners of adjacent plots. Unavoidable differences in value are adjusted by money payments with the right of appeal to the courts. At every step in the proceedings, there is ample opportunity for all parties to obtain a hearing, the final decision resting with the public authorities. In some cases, nearly all costs are borne by the owners; in others, a part is borne by the municipality.

The significant point in Lex Adickes as used in Germany is that, whether initiative comes from the owners or from the municipality, the procedure is carried out compulsorily. Although theoretically it can be employed in built-up areas, no instance of such application has been discovered.

In Tangiers, Morocco, Lex Adickes has been applied under nearly the same provisions as in Germany. Property owners are compelled to form an association which redistributes holdings and develops the necessary roads as laid out in the town plan. Dissatisfied owners may appeal to a mixed tribunal for compensation to be paid by the association. A somewhat similar law has recently been introduced in Czechoslovakia.

After the great earthquake and fire that destroyed a large part of Tokyo and Yokohama in 1923, the urban areas were replanned with new wide streets and numerous parks and playgrounds. A national act was passed embodying the basic principles of Lex Adickes. As Edward M. Bassett explains the procedure:

> Each former land owner was given a parcel of land in or near the old location as nearly as possible of the same value as what he lost. 10 percent was subtracted to cover the making of wider streets, larger parks, and the cost of the reallotment. Usually the new parcel, although slightly smaller than the old, was fully as valuable because of the redesigning of the streets and parks. A new zoning plan was added to the whole.[8]

In this case, the principle of Lex Adickes was carried out compulsorily over wide areas where many buildings, still standing, had to be moved to their new locations.

Voluntary pooling and replotting was carried out in Nome, Alaska, after the fire of 1934 which destroyed most of the town, and in Erie, Pennsylvania, in 1931 in connection with replanning a poorly laid out subdivision involving about 14 owners. In both cases, all property owners agreed to the redistribution and deeded their property to a trustee or to the city, which then deeded back the new plots assigned to them. Although effective in these cases, the difficulty of obtaining unanimous consent from all owners involved makes such voluntary procedure impracticable except under unusually favorable circumstances.

In applying the principles of Lex Adickes to conditions in the United States, it appears that, disregarding legal obstacles for the moment, such compulsory powers in the hands of municipal governments would be of great value in bringing about the reorganization of the hundreds of square miles of vacant or sparsely built subdivisions that surround our cities. Ways in which this problem can be dealt with on a purely voluntary basis have already been suggested. When there are many owners, however, voluntary reorganization may be blocked by a single recalcitrant property holder. In such a case, the mere threat of compulsion might insure the cooperation of all owners. This has been the case in many German cities.

In many subdivisions where none or only a few of the streets have been graded, paved, or equipped with utilities, such pooling and replotting might result in the redesign of the street system to fit the topography, the introduction of park and playground areas or other measures to prevent blight, and the provision of a

[8] Bassett, Edward M.: "Lex Adickes in Tokyo, Japan," in *Proceedings, National Conference on Slum Clearance* (1933), p. 52.

basis for the development of a stable home community. Another possibility is the grouping of all small plots on one or two streets already opened, and the return of the remainder of the area to acreage. Savings to the community in lower police, fire protection, street maintenance, snow removal, and other costs might even justify the municipality in absorbing the cost of moving a few houses to new locations.

As applied to urban areas already solidly built up, procedure such as suggested in Lex Adickes appears impractical. To the costs and difficulty of moving many buildings are added the obstacles of investments in streets and utilities which cities cannot afford to scrap. In the absence of a catastrophic fire or earthquake, it appears that large-scale rebuilding of slums and blighted areas would be very difficult to bring about under the procedures specified by the Lex Adickes.

It is extremely unlikely that the courts in this country would at this time uphold the validity of statutes based on the principle of Lex Adickes. If such statutes were founded on the power of eminent domain, then they would not meet the constitutional requirement that the owner receive "just compensation" for the property taken, because that requirement has been interpreted to mean compensation in cash. If such statutes were founded on the police power (and they have been so interpreted abroad), then doubt arises as to whether or not the public and the courts are sufficiently aware of the existence of the conditions under discussion, their relationship to the health, safety, morals, and welfare of the public, and the suitability of the proposed remedy. With proper public education on the subject, it is conceivable that, in due course, liberal courts would uphold such statutes. Otherwise, constitutional amendments would be necessary.

# PART III—SECTION 5

# TAXATION AS AN AID OR HANDICAP TO RATIONAL URBAN LAND POLICIES

## Significance of the Property Tax

The property tax has been, is, and undoubtedly will continue to be the main source of revenue for city governments. Local governments derived 92.5 percent of their tax revenues from the property tax in 1932. It is estimated by the National Industrial Conference Board[1] that, as a result of state-shared taxes, this proportion declined to 90 percent in 1934.

The following table, showing the proportion of tax revenues raised by property taxation, has been prepared by Professor Alfred G. Buehler on the basis of census data. "State and local government taxes on city real estate, farm land and buildings, and other property supplied revenues of $4,685,000,000 in 1932, or approximately 55 percent of the nation's total tax bill of $8,500,000,000. Special assessments on property amounted to $321,000,000 in addition."[2]

The relative importance of the property tax for the nation as a whole does, however, appear to be declining sharply. It is estimated by the authors of *Facing the Tax Problem*[3] that the property tax yielded $4,500,000,000 in 1937 or only 36 percent of the estimated yield of $12,500,000,000 from all Federal, State, and local tax sources.

This decline in relative importance in the property tax has been brought about by the great increase in Federal revenues and by the pronounced shift on the part of State governments from property taxes to other types of levies—notably gasoline, motor vehicle, income, general sales, and chain-store taxes. There appears to be no reason to doubt, however, that the property tax will continue to provide the bulk of local revenues.

The property tax is significant not only because of its predominant place in our entire tax scheme, however, but also because it affects the economic and social well-being of the people in other than purely fiscal ways.

Variations in methods of levying and efficiency in administration of taxation have a bearing upon the development of urban property. Property tax systems may be so devised as to foster speculation, encourage land sweating, increase poverty, prevent improvements, or bring about numerous other undesirable results. Rational zoning and scientific taxation, on the other hand, may be made companion measures for the proper protection and regulation of urban land and its use.

### Devolution of the General Property Tax

The concept of the general property tax, which has so fastened itself upon the American people, was built up in the 19th century. Property taxes in colonial times were levied upon particular classes of property. There were also in a few instances examples of differential rates upon different types of property.

Zeal for democratic principles exhibited some naive and misguided manifestations in the 19th century. In that century attempts were made to achieve democracy in politics by rotation in office and the long ballot, and to achieve democracy in taxation by an all-inclusive general property tax, which was cemented into our State and local tax systems by means of the wholesale adoption of constitutional uniformity clauses. It would be difficult to determine whether the spoils system or the general property tax has been accompanied by greater inefficiency and inequity, but there has been a heartening breaking away from both since the beginning of the present century.

The various terms of property taxation are loosely used, thereby giving rise to much confusion. One frequently hears economists quoted as denouncing property taxation, when, in reality, their denunciation was directed toward general property taxation, which is quite a different thing. The following definitions should be kept in mind in any discussion of property taxation: A general property tax is a tax which is assessed and levied upon all types of property, both real

TABLE 5.—*Property taxation*

[In millions]

| Government | 1932 | | 1922 | |
|---|---|---|---|---|
| | Amount | Percent of taxes and special assessments | Amount | Percent of taxes and special assessments |
| States | $324 | 19.4 | $348 | 40.2 |
| Counties | 877 | 83.3 | 687 | 92.2 |
| Cities and other incorporated places | 2,058 | 83.4 | 1,345 | 82.6 |
| Other local governments | 1,426 | 96.3 | 941 | 96.0 |
| Total | 4,685 | 70.1 | 3,321 | 78.6 |

[1] Cost of Government in the United States, 1933–35, p. 45.

[2] Public Finance, p. 270.

[3] Carl Shoup, Roy Blough, and Mabel Newcomer. Twentieth Century Fund, Inc., 1937.

and personal, in a uniform manner and at the same rate. A real property tax is levied upon land and buildings. Personal property taxation is of two kinds—tangible and intangible. The former includes personal belongings (such as clothing, furs, jewelry), household effects, factory and farm machinery, stocks of merchandise in stores and warehouses, and livestock. Intangible personalty is made up of securities, mortgages, and credit instruments.

The term property taxation may be applied to any tax upon any class of property, or it may be used to refer to property taxation in general. To give a blanket indictment of property taxation would be very different from condemning the general property tax. The former would mean the rejection of any form of property taxation. The latter merely means an attack upon the attempt to tax all property and to tax it all alike.

The gradual build-up of the general property tax is described by Jens P. Jensen in *Property Taxation in the United States*,[4] and also by Joseph D. Silverherz[5] in *The Assessment of Real Property in the United States*.

During the last half of the 19th century, the general property tax reached its zenith. Constitutions then adopted bristled with rigid provisions for equality and uniformity. The uniformity clause, which in its typical form is to the effect that "All taxation shall be equal and uniform," was a feature of most State constitutions by 1900.

In recent years, however, no constitutional provisions requiring uniformity have been adopted, and many have been abolished or amended. It soon became apparent that the uniform and equal taxation of all types of property was an administrative impossibility. Intangibles and the less visible forms of tangible personalty went into hiding. Although personal property represented an ever-increasing proportion of the national wealth, it constituted an ever-decreasing proportion of the property tax base. Tax administrators in some States resorted to the use of tax ferrets and various trickery devices to enforce the taxation of personalty, but wholesale evasion continued. The tax penalized the conscientious taxpayer and conferred benefits on the less scrupulous. Economists denounced the general property tax in the most vigorous terms. It was everywhere proclaimed a failure. Yet so strong was its popular appeal that reform was exceedingly difficult.

**Classified Property Tax**

The movement for classification of property and taxation of the different classes at different rates represented the initial step in the break-down of the general property tax. The rigid uniformity clause in many States prevented this reform, and the adoption of classification had to wait upon constitutional amendments. Pennsylvania was one of the first States to permit classification. Connecticut, Maryland, Alabama, and Virginia all made some measure of classification legal around the beginning of the century. The spread of the classification device has progressed steadily since that time.

At present six States and the District of Columbia have no constitutional requirements as to uniformity. Seventeen State constitutions permit general classification and 13 limited classification. Twelve States have rigid uniformity clauses or have provisions which have been so interpreted by the courts. It must be borne in mind that, in some cases, the constitutional provision is not sufficiently clear to make evident, until the question has been settled judicially, to what extent classification is permitted.

Very few of the legislatures which have the power to adopt a comprehensive classified system have done so. The States having the most comprehensive of the classified systems and the years in which they adopted such systems are: Minnesota (1911), Virginia (1915), Kentucky (1917), Montana (1919), Ohio (1931), and West Virginia (1932).

Amendment proposals permitting classification have been submitted to the voters in most of the States still requiring uniformity, but have failed of ratification. In some States, several attempts have had to be made before the approval of the voters could be obtained on such an amendment. This was particularly true of Ohio, where classification amendments were

TABLE 6.—*Status of States with regard to uniformity provisions*

| No constitutional restrictions | General classification permitted | Limited classification permitted | Classification not permitted |
|---|---|---|---|
| Connecticut. | Arizona. | Alabama. | Arkansas. |
| District of Columbia. | California. | Florida. | Georgia.[2] |
| Iowa. | Colorado. | Kansas. | Illinois. |
| New York. | Delaware. | Maine. | Indiana. |
| Ohio. | Idaho. | Maryland. | Massachusetts. |
| Rhode Island. | Kentucky. | Michigan. | Mississippi. |
| Vermont. | Louisiana. | Nebraska. | Missouri.[2] |
| | Minnesota. | New Mexico. | Nevada. |
| | Montana. | South Carolina.[1] | New Hampshire.[2] |
| | New Jersey. | Utah. | Tennessee. |
| | North Carolina. | Washington. | Texas.[2] |
| | North Dakota. | West Virginia. | Wyoming. |
| | Oklahoma. | Wisconsin. | |
| | Oregon. | | |
| | Pennsylvania. | | |
| | South Dakota. | | |
| | Virginia. | | |

[1] No enabling legislation has been passed and the uniformity rule still applies to intangibles as to all other property. It seems that the law is poorly enforced, however, and much intangible as well as other property escapes or is grossly underassessed.

[2] Classification would be possible except for narrow viewpoint of courts.

[4] University of Chicago Press, 1931, pp. 19–47.

[5] Special Report of the New York Tax Commission, 1936, pp. 1–9.

submitted to the voters 12 times before one was finally ratified in 1929. Opposition was centered chiefly in the rural regions, where it was believed that the amendment would favor special interests.

Classification amendments were defeated in Georgia and Mississippi in 1932 and in Washington in 1936. They were adopted in Colorado and North Carolina in 1936 and in Georgia in 1937.[5a]

Under a system of classification, rates vary according to the type of property, and intangibles are taxed at a much lower rate than real estate. The theory of such legislation is that the lower rate on intangibles will coax them out of hiding. In some States, this has taken place, and much property has been returned to the assessment rolls. This has resulted in the yield from intangibles being somewhat higher when taxed at low rates under the classified system than when taxed at high rates under the general property tax.[5b]

#### Abolition of State Property Tax

Another reform movement affecting the general property tax has been the advocacy of the abolition of the State property tax. This has frequently been designated as the movement for separation of sources. The latter term is somewhat confusing, however, as it is by no means synonymous with the former. The abolition of a State tax on property does not necessarily mean a complete separation of sources of State and local revenue, and, as a matter of fact, it has never had that result. Seven State governments (Delaware, Illinois, New York, North Carolina, Oklahoma, Rhode Island, and Vermont) have relinquished the property tax either permanently or temporarily. No State tax is levied on real property in Pennsylvania nor on real property and tangible personalty in Virginia. Universal increases, however, in State aid and in the sharing of State collected revenues indicate that State and local revenues will be more closely interrelated in the future than they have ever been in the past, regardless of whether or not a State tax on property is continued.

#### Exemptions of Specified Forms of Personalty

A much more definite indication of the break-down of the general property tax concept appears in the substantial exemptions of various types of personalty and of much real and personal property according to ownership and use.

The most important types of personalty exemptions are those relating to household goods, machinery, and government securities. All household furnishings are exempt from local taxation in six States—Delaware, Mississippi, New York, Ohio, Oregon, and Wisconsin. On the other hand, no exemptions are legally permitted in 14 States. Exemptions from local taxation of household goods in the remaining States range from $50 to $1,000.[6]

Some States exempt all wearing apparel and jewelry, while others prescribe only a limited amount of exemption. There are likewise varying regulations concerning the taxation of food supplies.

Many of the provisions relating to the exemption of personal property are petty, and the procedure involved would be rather degrading if the tax were efficiently applied. For example, the provisions in Wisconsin, where exemptions are unusually liberal, indicate the detailed check on intimate personal possessions which would be necessary to insure efficient collection. The following tangible personalty is tax-free in that State: Wearing apparel and personal ornament to the value of $750; private libraries, $200; firearms, $25; poultry, $25; family portraits, household furniture, mechanics' and farmers' tools, one piano or organ, one bicycle, one sewing machine, five swarms of bees, one watch, one boat, horses and mules, and family provisions for 6 months.

It has been found that the amount of tax collected on household goods does not appear to justify the administrative difficulties; and, according to Albert W. Noonan of the National Association of Assessing Officers, States are gradually abandoning the assessment and taxation of such goods.

Massachusetts recently exempted manufacturing machinery from all property taxation. Machinery is also exempt in New York, where all personal property is exempt and Delaware, where practically all personal property except livestock is exempt either by law or in practice. In Philadelphia, Pittsburgh, and Scranton, machinery is exempt from city taxation, and there are no county and State taxes levied on this type of property. In Maryland it is exempt from county taxation on a county-option basis, without the option to withdraw the exemption once it has been granted. The county of Baltimore and the city of Baltimore, which is treated as a county since it is not a part of any county, are among the jurisdictions which have exempted machinery.[7]

Ten States grant substantial exemptions to manufacturing property for a limited number of years after construction. In six States, machinery is classified to some extent for tax purposes. Machinery is a part of the general property tax in 29 States.

---

[5a] Another proposal for amendment, submitted to the voters in Washington in November 1938, was also defeated.

[5b] A comprehensive discussion of "Classified Property Taxes" by Simeon E. Leland will appear in the volume, *Property Taxation*, to be published by the Tax Policy League, April 1940.

[6] *National Association of Assessing Officers Bulletin No. 12*, April 1, 1936.

[7] National Association of Assessing Officers: *Assessors News-Letter*, August 1936, and *Bulletin No. 16*, August 1936.

The most serious inroad into the general property tax is undoubtedly made by the exemption of government securities. Approximately $50,000,000,000 of Federal, State, and local securities are wholly or partially exempt from both income and property taxation.

Although this exemption represents the greatest drawback toward achieving an all-inclusive general property tax, it is not particularly significant in a consideration of the devolution of the tax, inasmuch as the exemption of such securities antedates the building up of the general property tax and is not part of the whittling away process now in evidence. Consideration of tax-exempt securities does not come within the scope of this report. It is sufficient here merely to bear in mind that the property tax does not reach this vast amount of property.

#### Untaxing of All Personalty

The next logical step in the gradual whittling away of the general property tax would appear to be the complete untaxing of all personalty. This has happened in New York State and has practically come to pass in Delaware.[7a]

The New York tax law now specifies: "All real property within this State is taxable unless exempt from taxation by law. Notwithstanding any provisions of this chapter, or of any other general, special, or local law to the contrary, personal property whether tangible or intangible, shall not be liable to taxation locally for State or local purposes." [8]

Tax commissions in New York had been recommending the abolition of the personal property tax for 50 years.[8a] *The New York Times* commented as follows upon its passing:

> "Sometimes a tree which has withstood the winter's gales will fall on a calm summer's night. Human institutions occasionally take the same course, as in the case of the bill signed this week by Governor Lehman, repealing the personal property tax. It was a hoary ancient, which in its prime had put out a pleasant cover of green leaves to shade the tax collector. In 1866, for example, personal property in this city accounted for more than a third of the assessment roll. But in time the city came to lean more and more heavily on real estate, the income tax was adopted, and the personal property tax gradually sank into disrepute. Of recent years it has been a mockery. Assessed by guesswork, fortified by a hasty conning of the telephone book and the social register, it has been productive of little but ill will. By 1925 its share of the local burden had dropped to 2 percent: last year less than $2,000,000 was actually collected from this source. For years merchants and other businessmen have carried on an agitation for the repeal of this impost." [9]

No one lamented the loss of the tax, and there has been no agitation for its reenactment.

#### Untaxing of Improvements

There seem to be some indications that the devolutionary process now going on may extend from personal property to improvements, thereby eventually reducing the general property tax to a land tax, with increasing reliance on the income tax as a means of reaching other taxpaying ability.

The strong movement for homestead exemptions and the agitation for exemption of public housing projects, to be discussed later, the general spread of net income taxes, and the appearance of the automobile trailer may further this development.

When it is generally realized that in homestead exemption States tenants are placed at an unfair disadvantage in being subjected to real estate taxation (through the shifting of a portion of such taxes in the form of rent) as compared to tax-free home owners, it is probable that vigorous protests will be made in their behalf. Homestead exemptions are likely to constitute a severe drain upon State and local revenues, however, and to extend the exemption privilege to rented properties would be impossible without recourse to new sources of funds. When the expected pressure materializes, lawmakers will be faced with the necessity of considering anew the whole problem of real estate taxation.

The untaxing of all improvements, in lieu of the exemption of homesteads (including land and building), would relieve both the small home owner and the rent payer. The elimination of improvements from the property tax base would simplify the tax and make it more susceptible of efficient administration. The break-down of real estate into its two constituent elements—land and improvements—with separate consideration of each for taxing purposes appears logical because of the diverse character of the two elements.

The separate assessment and differential taxation of land and improvements already in effect in some places will be discussed later.

#### Exemptions by Ownership and Use

In the preceding pages, exemptions from the property tax by types of property have been considered. Property tax exemptions are also granted according to ownership and use. By far the most important of these are those granted to government properties. Exemptions to philanthropic and educational institutions at present rank next in significance. The homestead exemption movement is of recent origin but is spreading rapidly. A fourth important type of ownership and use exemption is that accorded to industries for the purpose of influencing their location and encouraging their development.

---

[7a] Since this was written, Delaware has abolished (in 1939) all that was left of its personal property taxation, both for state and local purposes.

[8] Tax law, art. 1, sec. 3, as amended by chap. 470, Laws 1933.

[8a] A constitutional amendment adopted in November 1938 prohibits the taxation of intangible personalty on an ad valorem basis in New York State.

[9] Editorial, April 29, 1933.

The total amount of exempt property is staggering. Moreover, it appears to be increasing, both relatively and actually. The ownership and use exemptions relate mainly to real estate, although some personal property is involved, whereas the exemptions by types of property have as yet related almost entirely to personalty.

A city is without the legal power to tax property owned by the Federal, State, county, and other governments. To tax its own property would constitute merely a bookkeeping gesture. In some cases, the exemption of property owned by other governments is justifiable. In other instances, it would appear that taxes should be voluntarily paid by the government owning the property. This is particularly true where a substantial portion of the urban real estate is owned by another governmental unit.

The exemption of property used for religious, charitable, and educational purposes has strong popular support. It is considered that such institutions relieve the government of certain burdens and, therefore, more than compensate for the subsidy involved in exemptions. In varying degrees, this is true, but there seems abundant evidence that the exemption privilege has on the whole been granted too lavishly, and there are many thoughtful persons who would prefer an outright subsidy to the present policy. Appeals for direct subsidy are likely to receive much more careful scrutiny than those for tax exemption. Moreover, the amount of the subsidy would be an open record.

Because of the very great social and economic disturbances that such a course would involve, the wholesale substitution of subsidies for existing exemptions is not advocated here. It does seem desirable, however, that States and local governments reexamine their exemption policy and return to the tax rolls any properties that are unjustifiably favored. In the future, moreover, direct subsidy rather than tax exemption should be granted to such new types of enterprise as are deemed worthy of governmental assistance.

Tax exemption is nothing more nor less than a governmental subsidy, which is made up annually from the contributions of taxpayers. It is, however, a concealed subsidy, the true extent of which is not realized by taxpayers.

Untaxing all buildings would alleviate the problem of exemptions. Generally speaking, most of the value of the property in use by tax-exempt organizations is in improvements. If the tax on improvements were abolished and taxpaying ability represented by ownership of improvements were reached through a regular State income tax, charitable, educational, and similar groups would be exempt from the income tax. They should not, however, be exempt from the tax on land. If vacant land is being held by them for speculative purposes, it should be taxed as though in the hands of private owners. The tax that fell upon the part of the land that was being used would be equivalent to a service charge for municipal services. There seems no reason why a great institution such as a university, State hospital, or other exempt property should be given health, fire, and police protection, sanitary services, and the like at the expense of the local government, as is the case with tax exemption, rather than at the expense of the more widespread group of taxpayers who own the property or benefit from its use.

Homestead exemptions have been granted in seven States, and in three others (North Carolina, Oklahoma, and Utah) the constitution has been amended to permit the legislature to grant such exemptions. The principal provisions of existing homestead exemption laws may be found in the following table. In five of these laws, the exemption applies only to State levies. In the others, the exemption applies both to State and local levies.

#### Tax Exemption for Housing Projects

Tax exemption has been widely urged and to some extent permitted in connection with housing projects. The movement appears to have originated and been strongest in New York. It has assumed three main manifestations: first, the exemption of all new dwellings within a certain period; second, the exemption of limited-dividend housing projects; and third, the exemption of public housing projects.

There has been some legislation of the first type in at least three States. The New York State law[10] permitted a county, city, town, or village to exempt from local taxation until January 1, 1932, under whatever restrictions might be locally adopted, all new dwellings, except hotels, begun before April 1, 1922, and completed within 2 years of that date. New York City was the only local government to take advantage of this permission. This it did by exempting new dwellings from taxation, during the period permitted by the State law, up to $5,000 per dwelling unit. The law was later amended to cover construction commenced before April 1, 1925, and completed within 2 years after such commencement.

A variant of this legislation is the 1936 amendment to the tax law permitting New York City to exempt from local taxation, for not more than 5 years, alterations and improvements to existent buildings, except those increasing the gross cubic area thereof. It is provided, however, that in no case shall such alterations be exempted to an extent greater in value than that of the previously existent building.[11]

[10] Ch. 949, Laws of 1920.
[11] Ch. 474, Laws of 1936.

TABLE 7.—*Homestead tax exemption laws*[1]

| State | Date | Type of law | Citation | Governments affected | Amount of exemption |
|---|---|---|---|---|---|
| Arkansas | 1936 | Constitution | Amendment 23 | State | Up to first $1,000 of assessed valuation. |
| Florida | 1934 | do | Art. X, sec. 7a | All governments | Homesteads valued up to $5,000 exempted. Still liable, however, for levies to retire existing indebtedness. |
| Louisiana | 1934 | do | Art. X, sec. 4 | State | Homesteads up to 160 acres to value of $2,000. |
| Minnesota | 1933 | Statute | L. 1933, ch. 359 | All governments | The law provides that first $4,000 of value of unplatted real estate used for homesteads shall be taxed on 20 percent of full value, and that first $4,000 of platted real estate shall be taxed on 25 percent of full value. Previously such property was classified so that the corresponding percentages were 33⅓ and 40 percent, respectively. These latter percentages are still in effect for parts of values of homesteads in excess of $4,000. The constitutionality of this law was upheld by Minnesota Supreme Court in Apr. 14, 1934. |
| Mississippi | 1934 | do | H. B. No. 321 | State | Homesteads owned by residents to extent of $2,500 of assessed valuation thereof. Quantity of land exempted not to exceed 60 acres. |
| North Carolina | 1936 | Constitution | Art. X, sec. 5 | Apparently all | Legislature may exempt from taxation not exceeding $1,000 in value of property held and used as the place of residence of the owner. |
| Oklahoma | 1935 | do | | State | Permits legislature to exempt homesteads. Amount of exemption not stated. |
| Texas | 1933 | do | Art. VIII, sec. 1-a | do | All residence homesteads not exceeding $3,000 in value. |
| Utah | 1936 | do | Art. XIII, sec. 2 | Apparently all | Legislature may provide for exemption of homesteads up to value of $2,000. |
| West Virginia | 1932 | do | Art. X, sec. 1 | All | Taxes assessed on all property owned, used, and occupied by the owner thereof exclusively for residential purposes not to exceed ½ of 1 percent; other property taxed at rates varying from ½ of 1 to 2 percent. |

[1] Since the preparation of this table, legislation providing for varying degrees of homestead exemption has been enacted in Georgia, Iowa, Minnesota, and South Dakota. In November 1938, Louisiana adopted a constitutional amendment increasing homestead exemptions to $4,000 and allowing a 3-year exemption on homesteads acquired after January 1, 1938.

Bethlehem, Pa., in 1923, adopted an ordinance granting 5 years' tax exemption to residential buildings completed before July 1, 1929, on assessed valuation up to $7,000 per dwelling.

Vermont followed suit with an exemption as follows:

> Buildings erected after June 1, 1922, used and occupied exclusively as a home, and dwelling houses erected after April 1, 1929, whether for sale or rent and appraised by the listers in the grand list, exclusive of land, at not more than $5,000, may be exempted from taxation for a period of not more than 5 years if the town in which such buildings and houses are located so votes. The amount and duration of such exemption, provided it is not more than $5,000, shall be determined by such votes. Dwelling houses erected after April 1, 1929, shall not be exempt from State taxes.[12]

The second type of tax exemption for housing projects (that is, the exemption of limited-dividend projects) has also been exemplified in New York. Local law No. 9, enacted by the New York Municipal Assembly on June 22, 1927, provides that buildings and improvements in New York City erected before January 1, 1937 (now extended to January 1, 1947), by a limited-dividend housing company formed under the State housing law[13] in connection with a project or projects authorized by such law shall not be subject to taxation for local purposes, other than special assessments, for a period of 20 years after the completion of such buildings or improvements. This exemption does not apply to taxation on land value.

Limited-dividend developments took on a new aspect when the Federal Government entered the field in 1932 by authorizing the Reconstruction Finance Corporation to make loans to such corporations for housing purposes and for the reconstruction of slum areas.

Only one loan was made by the R. F. C. for housing purposes, and that was to the Fred F. French Co. for the construction of Knickerbocker Village on the lower East Side in New York. The city of New York granted tax exemption to the project in accordance with the State housing law. Exemption, however, was refused to other limited-dividend projects in the city which later obtained loans from the P. W. A. Housing Division.

The third example of tax exemption is in connection with the Federal housing projects.

The Housing Division of the P. W. A. indicated its willingness to pay reasonable charges for municipal services in lieu of taxes. The Comptroller General having ruled, however, that such payments could not be made, the following legislation with respect to such charges was enacted in 1936:

P. A. No. 837, approved June 29, 1936, relates to low-cost housing or slum-clearance projects heretofore or hereafter constructed with funds allotted to the Federal Emergency Administration of Public Works pur-

[12] Public Laws, Ch. 33, sec. 596.
[13] Laws 1926, Ch. 823.

suant to Title II of the National Industrial Recovery Act, the Emergency Relief Appropriation Act of 1935, or any other law:

SEC. 2. Upon the request of any State or political subdivision in which any such project has been or will be constructed, the Federal Emergency Administrator of Public Works is authorized to enter into an agreement, and to consent to the renewal or alteration thereof, with such State or subdivision for the payment by the United States of sums in lieu of taxes. Such sums shall be fixed in such agreement and shall be based upon the cost of the public or municipal services to be supplied for the benefit of such project or the persons residing on or occupying such premises, but taking into consideration the benefits to be derived by such State or subdivision from such project.[14]

A similar law (P. A. 845), also approved June 29, 1936, relates to resettlement or rural rehabilitation projects under the Resettlement Administration.

Those who question the wisdom of tax-exemption for special classes of housing projects point out that such a policy benefits only a very small proportion of low-income families, whereas it is costly to the others who must pay higher rents or taxes as a result of the exemption.

One test of the efficiency of a slum rehabilitation and low-rent housing policy is whether the policy can be carried out on a large scale or, by its very nature, is limited in scope. We have abundant data to prove that the housing problem is a major one in our American cities. The governmental projects to date, commendable as they may be, affect but a small fraction of the blighted areas and the low-income groups. The more comprehensive our rehabilitation programs become the more dubious would be a special policy of tax exemption for such projects. It may be possible for cities to grant exemption to one or two projects without serious derangement of the city finances; but if a substantial part of the blighted areas should ever be rebuilt under the stimulus of tax exemption, either by public or private initiative, the tax burden on the remaining taxpayers would become prohibitive. Such a development might very conceivably lead to the adoption of regressive sales taxes which would more than offset for the low-income groups any advantage derived by exemption.

The two chief benefits anticipated by proponents of tax exemption for public or limited-dividend housing projects are: (1) stimulation of a greater amount of such construction, either with or without slum clearance, than would otherwise be undertaken; and (2) lower rents for the tenants of such projects than could otherwise be offered. Conceding their desirability, it is pertinent to ask whether these two objects could not better be attained otherwise than by a concealed subsidy.

[14] This has been superseded for new projects by the United States Housing Act of 1937, which authorizes the United States Housing Authority to make annual contributions to public housing agencies with the stipulation that, "No part of such annual contributions by the Authority shall be made available for any project unless and until the State, city, county, or other political subdivision in which such project is situated shall contribute, in the form of cash or tax remissions, general or special, or tax exemptions, at least 20 per centum of the annual contributions herein provided."

#### Tax Exemption to Industries

Very much less property appears likely to be exempt by reason of a policy of encouraging industries than is found in the first two categories, and this practice does not seem likely to spread as rapidly as the homestead exemption movement is doing. Economists generally have considered tax exemption as a means of influencing location of industries indefensible.

In a study of this subject in 1929,[15] Professor Jens P. Jensen found that "a study of tax exemptions for business reasons reveals no striking change in the public attitude toward such exemptions during our entire history."

A survey of more than 80 cities in 1936 by the National Association of Municipal Finance Officers showed that less than 10 percent of the cities offered industries inducements of a tax exemption or abatement nature.

Fourteen States, however, either authorize such exemptions or permit local governments to offer them. These States are, with one exception, New England or Southern States. The exemptions are embodied in the constitution in a few States. Some exemptions apply only to State taxes or to local taxes, while others may include both.

The following information concerning these provisions for exemptions has been taken from Professor Jensen's study.

*Alabama.*—Counties and cities may remit all county and city taxes, except county- and district-school three- and one-mill taxes, for a period of 5 years on all factories or additions to or extensions of factories for the spinning of thread and yarns and the knitting and weaving of cloth and other fabrics of cotton and wool in this State, and plants for the building of ships, and factories for the manufacture of bags, wood-pulp products, wooden cabinets, and farm implements, or any other manufactured products.

*Arkansas.*—Capital invested in textile mills for the manufacture of cotton and fiber goods for 7 years (1926)

*Delaware.*—The real estate of a manufacturing industry of New Castle, Delaware City, and Newport, not exceeding 5 acres, for 10 years.

*Georgia.*—Legislature (1925) empowered counties and cities, by majority vote to exempt for 5 years plants established or enlarged after 1924 to manufacture or process cotton, wool, linen, silk, clay, wood, metal, minerals, creamery or cheese plant, electric plants, from all county and city ad valorem taxes.

[15] Tax Exemption as Means of Encouragement to Industry, University of Kansas, 1929.

*Kentucky.*—Constitution permits general assembly to authorize cities or towns to exempt manufacturing establishments for 5 years.

*Louisiana.*—For 10 years from the date of completion, the capital stock, franchise, and property of all corporations constructing, owning, and operating within the State a combined system of irrigation, navigation, and hydroelectric power, and using the fresh water of Louisiana streams and watersheds, provided not less than $3,000,000 shall have been expended for construction of either system prior to January 1, 1932 (1926).

For 10 years after completion, all pipe lines, pumping plants, and property used in transporting gas within State, if constructed and completed between 1921 and 1926.

For 15 years after 1921, buildings, fixtures, and machinery used for manufacturing or commercial purposes, located on lands situated on the navigation canal leased from the board of commissioners of the port of New Orleans, if more than $25,000 is invested and more than 25 persons employed.

*Maryland.*—The real and personal property owned by chambers of commerce or boards of trade and used solely by them for encouragement of certain industries are exempt in certain counties (1927).

*Mississippi.*—Factories, with tangible personalty, but not finished products, making paper products, if constructed before 1928, for 5 years (1926); factories or plants for carbonizing hard wood and wood waste and distilling wood alcohol and byproducts, from county and municipal taxes for 5 years after 1926, at discretion of local governing board (1926); a wide range of factories but not their products, for 5 years; municipalities may exempt for 10 years property used in establishment of manufactories and public utilities, except railroads; feed mills for 5 years (1928); buildings erected to be leased to exempt factories also exempt (1928).

*New Hampshire.*—Any town or city, by two-thirds vote, may abate taxes to any manufacturing concern upon such terms as may be mutually agreed upon; after 4 years they may vote again, extending the exemption for another 5 years, but not more than 10 years in all. Formerly this abatement could not be granted to any industry previously abated in any other town.

*Oklahoma.*—Constitution provides that legislature may authorize towns to exempt, by majority vote, any industry or utility for 5 years; in 1921 this was done for property used in manufacture of cotton by weaving into cloth, for 10 years.

*Rhode Island.*—Any city may exempt for 10 years manufacturing property located in consequence of such exemption.

A special act authorizes town of Warren to exempt manufacturing property, idle for 2 years or more, for a period of 10 years, from the date of renewal of operation of such property (1927).

*South Carolina.*—Under constitution, cities and towns may vote for 5 years from all taxes, except school taxes, manufacturing establishments established within their limits; amended (1926) so that in certain counties all cotton or textile enterprises shall be similarly exempt; also (1926) in certain counties all manufacturies of a value above $100,000 shall be exempt from all county taxes except for school, for 5 years. Statutory enactments thereunder (1927). Any county may exempt any new manufacturing enterprise, or addition, of not less than $50,000, from county taxes for 5 years (1927). Statutory enactments thereunder (1929).

*Vermont.*—Manufacturing establishments, quarries, and mines, if investment exceeds $1,000, for 10 years, by vote of town.

*Wyoming.*—Sugar factories for 5 years, provided a specified percentage of beets used are grown in State (1929). Such a law was formerly in effect, but was repealed and then reenacted.

There are also numerous specific provisions in these and other States.

**Extent of Property Tax Exemption**

The following table indicates the extent of all classes of property exemption in some representative cities. The data were obtained from questionnaires sent to various municipal officials by a staff member of the Urbanism Committee.

TABLE 8.—*Ratio of exempt property to total property*

| City | Year | Total real and personal property assessed | Total exempt property | Total property taxable plus exempt | Percentage of property exempt |
|---|---|---|---|---|---|
| New York | 1935 | [1] $16,649,771,199 | [2] $4,565,484,911 | $21,215,256,110 | 21.5 |
| Los Angeles | 1935 | 1,199,746,795 | 33,196,635 | 1,232,943,430 | [3] 2.69 |
| Boston | 1935 | 1,650,000,000 | [4] 465,724,500 | 2,115,724,500 | 22.0 |
| Milwaukee | 1935 | 852,174,165 | [5] 374,837,204 | 1,227,011,369 | 30.5 |
| New Orleans | 1935 | [6] 490,515,000 | (7) | 490,515,000 | [8] 4.6 |
| Seattle (King County). | 1935 | [9] 484,657,954 | [10] 205,480,000 | 690,137,954 | 29.7 |
| Indianapolis | 1935 | 505,286,060 | ([11]) | 525,286,060 | [12] 3.8 |
| Toledo | 1935 | 393,510,903 | 70,171,450 | 463,682,353 | 15.1 |
| Dayton | 1935 | 251,475,500 | [13] 28,793,000 | 280,268,500 | 10.3 |
| Oklahoma City | 1935 | 110,608,994 | [14] [15] 38,135,000 | [16] 148,743,994 | 25.6 |
| New Haven | 1935 | 309,800,812 | [16] 137,685,293 | 447,486,105 | 30.8 |
| Nashville | 1935 | 153,408,426 | [17] 40,500,000 | 193,908,426 | 20.9 |
| Salt Lake City | 1932 | 172,542,116 | [18] 32,971,421 | 205,513,537 | 16.0 |
| Norfolk | 1935 | 160,884,800 | [19] 21,804,730 | 182,689,530 | 11.9 |
| Austin | 1935 | 50,001,750 | [20] 50,054,635 | 100,056,385 | 50.0 |

[1] Real property only—Personalty not taxable in New York.
[2] 81.9 percent government.
[3] Does not include government property.
[4] 72.2 percent government.
[5] 32.6 percent government.
[6] Includes value of exempt homesteads.
[7] Homestead exemptions: $22,505,000 (figures not available on other exemptions).
[8] Homestead exemptions only.
[9] 50 percent assessment multiplied by 2.
[10] 74.4 percent government.
[11] Not assessed. Estimated at $20,000,000.
[12] Based on estimate and not assessment. Apparently does not include government property.
[13] 53.4 percent government.
[14] Not including $10,000,000 of motor vehicles.
[15] Estimated 52.4 percent government.
[16] 22.2 percent government.
[17] Estimated, 33.3 percent government.
[18] 65.4 percent government.
[19] 58.9 percent government.
[20] 89.0 percent government.

It will be seen from the above that complete and accurate statistics concerning the value of exempt property are not available in many cases.

Variations in classification in different cities and failure accurately to assess exempt property detract from the reliability of the calculated estimates. The last column is presented, therefore, for suggestive purposes rather than as an accurate comparison of the proportion of exempt property in each city.

The following opinion concerning the valuation of exempt property was expressed by Henry F. Long,

commissioner of corporations and taxation of Massachusetts, in a letter to a staff member:

> It is my opinion that approximately $9,000,000,000 of property values are in Massachusetts. Probably $7,000,000,000 would be the fair valuation of the taxable property and about $2,000,000,000 of the tax-exempt property. The tax-exempt property is generally valued at a lower rate of value than is true of taxable property.

The preceding table and the one following give some indication of the extent of exempt property and the principal classifications into which it may be divided.

The wide variations in the percentage of exempt property owned by the Government are due partly to variations in the extent of Federal, State, and county properties within the different cities. These percentages are also affected by Government ownership of utilities in some localities and by local variations in classification.

Austin, Tex., and New Haven, Conn., appear to have the greatest amount of exempt property. Property equivalent to 50 percent of the total valuation is exempt in the former city and over 30 percent in the latter. Austin, however, is the State capital, and approximately half of the exempt property is owned by the State. More than half of the exempt property in New Haven is owned by Yale and one or two other private educational institutions.

TABLE 9.—*Distribution of exempt property, by classes, in those cities listed in the foregoing table supplying information*

| | Boston | Milwaukee | Seattle (King County) | Dayton | Oklahoma City |
|---|---|---|---|---|---|
| Governmental | $336,428,900 | $174,625,070 | $77,000,000 | $15,372,580 | $20,000,000 |
| Educational (private) | 44,938,400 | 9,027,740 | 5,850,000 | 2,530,340 | 125,000 |
| Charitable | 42,697,300 | ---------- | 8,280,000 | 664,640 | 10,000 |
| Fraternal | ---------- | 19,502,220 | ---------- | 49,000 | 800,000 |
| Religious | 35,275,800 | 27,299,550 | 15,550,000 | 6,696,410 | 2,000,000 |
| Industrial | [2] 2,388,000 | [3] 140,774,024 | [4] 76,000,000 | ([5]) | [6] 15,000,000 |
| Other | 3,996,100 | [8] 3,608,600 | [9] 22,800,000 | 3,480,030 | [10] 200,000 |

| | New Haven | Nashville | Salt Lake City | Norfolk | Austin |
|---|---|---|---|---|---|
| Governmental | $30,533,605 | $10,000,000 | $21,556,185 | $12,833,770 | [1] $44,596,620 |
| Educational (private) | 67,834,880 | 20,000,000 | 400,005 | 254,740 | ---------- |
| Charitable | 7,098,633 | 1,500,000 | 486,685 | 1,045,250 | 253,770 |
| Fraternal | ---------- | 3,000,000 | 996,305 | 384,040 | ---------- |
| Religious | 9,104,825 | 2,500,000 | 10,406,255 | 7,214,630 | 5,139,625 |
| Industrial | [7] 14,415,035 | ---------- | ---------- | ---------- | ---------- |
| Other | [11] 8,698,315 | [12] 3,500,000 | 87,150 | 72,300 | 34,620 |

[1] Federal, $502,050; State, $24,830,685; county, $824,005; city, $18,439,880.
[2] Railroads and Lotta Crabtree estates.
[3] Railroads, terminal property and utilities.
[4] Utilities.
[5] Information not available.
[6] Oil wells and machinery, $10,000,000; securities, $5,000,000.
[7] Railroad and street railways.
[8] Plus new buildings of any kind excempt for years 1936 and 1937.
[9] Hospitals and personal property exemptions.
[10] Benevolent.
[11] Miscellaneous, soldiers' property.
[12] Federal housing project.

**Taxation of Private Properties Used for Public Recreation**

A letter containing the following questions was sent as a part of this study to all city-manager cities, in order to determine to what extent these cities granted exemption to private properties used for public recreational purposes.

> 1. Has your city been able, by formal or informal agreements with property owners, to secure temporary use of private property for public playgrounds, allotment gardens, or other community uses? If so, what rent or other compensation is paid for such use, if any?
>
> 2. Are private golf clubs, tennis clubs or other group uses of land for recreation purposes encouraged by low assessments on real-estate taxation or partial or complete tax exemption, or otherwise? If so, has any method been devised to recapture such subsidies if the property should be sold for a real-estate subdivision or other commercial development?

Sixty-nine replies were received. Twenty-four managers reported no public use of privately-owned property. Four of these volunteered the information that the city owned ample land for recreation purposes. Forty-five reported the use of privately-owned property for public-recreation purposes. Private grounds were used for playgrounds or ball fields in 38 cities, for community gardens in 16 cities, and for a swimming pool, parking lots, or a community center in 1 or 2 others. The owners received no compensation in 26 cities. There was an understanding in one, however, that the owners would not be responsible for any injuries suffered on the playground. In another city, no compensation was received from the city, but the owners were allowed to charge fees to the public. In 3 cities, a rent equivalent to the taxes on the property was paid by the city. A one dollar per year rental was paid in a few instances, sometimes with the understanding that the owner would get the improvements. In a number of cities, different policies were followed with respect to different properties. For example, one city paid one dollar per year for the use of one 11-acre playfield on a year-to-year lease. Under an informal agreement, nothing was paid for the use of 2 other tracts of 10 and 2 acres, respectively. A fourth tract amounting to 6 acres was obtained on a year-to-year lease for the payment of the equivalent of taxes. Seven other cities paid the amount of the taxes or less for some of the privately owned properties they were using.

Two replies did not state whether the owners received compensation. A nominal rental was paid in the other instances.

Agreements relating to the use of the property were both formal and informal.

Only four of the cities replied that land used for private golf clubs, tennis clubs, or other group-recreational purposes was favored by lowered assessments. Several respondents indicated that any discrimination in assessments for the purpose of favoring the use of land for golf clubs, etc., would be contrary to the State law. One manager reported that instead of lowering the assessment, an amusement license fee was charged for such projects. Other managers reported that it was the fixed policy of the city never to reduce assessments or to waive taxes under any condition or for any purpose.

The four cities granting these subsidies reported that assessments would be restored if the property were converted to other uses.

Some of the cities reported that they had refused to grant such exemptions in spite of numerous requests. Others stated that they had not received any requests of this nature.

## Real Estate Assessment

The importance of assessment in any consideration of the real-estate tax cannot be exaggerated. The equity of the tax can never be greater than the efficiency of the assessment procedure. Unfortunately, this procedure has been shockingly inefficient and unjust. In most jurisdictions, there has been a wide disparity between the assessed valuation and the actual value of the property, and the variations in the proportion of assessed to full value as among different taxpayers are almost unbelievable.

Existing assessment data are very inadequate. Estimates as to the ratio of assessed valuation to actual value are based on a few sampling processes. In only a few States is there anything approaching a logical classification of property for assessment purposes. Separate assessment statistics for land and improvements are not available in most localities. Exempt property is either assessed at very infrequent intervals or not assessed at all.

### Ratio of Assessed to Actual Values

The most acid test of assessment efficiency is to be found in the average ratio of the amount of the assessment to the market value of property and the deviations from such an average. In 43 of the States, the law provides that assessments be at full or true value. This is assumed by the administrators and courts and by public opinion generally to mean the market value of the property.

In a recent study of *The Assessment of Real Property in the United States*, by Joseph D. Silverherz,[16] an investigation was made of the available sources of information on this point to determine for the various States the average assessment ratio, the average deviation from such assessment ratio, and the coefficient of dispersion.[17]

The following data under State headings are taken from this study and indicate the low level of assessment efficiency existing throughout the country. A number of sampling studies comparing assessed values with actual sales records on expert appraisals have been made in various States during recent years. These samples form the basis of the conclusions reached in the Silverherz study. Many of the studies relate only to rural regions. This explains why urban data are not given in every instance.

The results of these surveys are so startling that it seems worthwhile to devote some space to recording some of the more outstanding findings for a number of States.

### Findings by States

*Arizona.*—A number of the State tax commission made the following statement with reference to a State survey in 1929: "We have found lands that have sold for $750 to $1,000 per acre assessed at $135, homes that have cost from $20,000 to $30,000 carried on the assessment rolls at $3,000 or $4,000. There will also be quite a pick up on property that has never been on the assessment rolls at all. For instance in one small town in Maricopa County, the records showed 58 pieces of improvements assessed, while our field men actually measured up 101."

*Arkansas.*—Assessment ratios were found to vary from 5 percent to over 100 percent in a study relating to the period 1921–25.

*California.*—Assessment ratios ranged from less than 5 percent to well over 110 percent in 1928. The coefficient of dispersion was 27.58 percent.

*Colorado.*—Assessment ratios were found to range from 14.6 percent to 531.6 percent in the case of rural properties, and from 16.9 percent to 232.9 percent in the case of urban properties in 1926. Coefficients of dispersion were 36.06 for rural and 39.31 for urban properties.

*Connecticut.*—Rural assessment ratios ranged from less than 20 percent to over 100 percent in 1930. Farms estimated at less than $5,000 were assessed at almost 80 percent of their true value, whereas those worth over $50,000 were assessed at an average of less than 40 percent.

*Delaware.*—The assessment ratio was higher and regressivity less pronounced in Wilmington than in the rest of the State. The following table indicates that pronounced inequalities exist throughout the entire State, however.

[16] Published by the New York State Tax Commission, 1936.

[17] In order to compare the average deviation of one set of assessments with another, it is necessary to divide each of them by their respective average assessment ratios. This conversion to a 100-percent assessment ratio basis is necessary in order to be able to judge the fairness of an assessment because the grading of any assessment depends not only on the average deviation but also on the average assessment ratio. For example, a 10-percent average deviation from an average ratio of 100 percent would be a good assessment; while an average deviation of 10 percent from a 20-percent average ratio would be a very poor assessment. For every dollar of inequality would be multiplied by a tax rate five times higher in the second case than in the first. The measure which takes both average assessment ratio and average deviation from this ratio into account is termed the "coefficient of dispersion." In the case we have been considering it is approximately 14 percent.

TABLE 10.—*Relation of value of property to assessment ratio in Delaware, 1927* [1]

| Value of property | Average assessment ratio | | | | | | |
|---|---|---|---|---|---|---|---|
| | Wilmington | New Castle | | Kent | | Sussex | |
| | | Town | Farm | Town | Farm | Town | Farm |
| $0–$999 | 96.1 | 81.9 | 89.3 | 91.4 | 101.5 | 78.6 | 108.0 |
| $1,000–$1,999 | 77.0 | 72.1 | 89.9 | 85.4 | 95.2 | 86.4 | 107.6 |
| $2,000–$2,999 | 66.5 | 77.9 | 55.0 | 81.8 | 100.6 | 72.8 | 95.1 |
| $3,000–$3,999 | 61.9 | 74.2 | 102.7 | 69.8 | 96.1 | 58.5 | 78.5 |
| $4,000–$4,999 | 63.3 | 67.5 | 84.1 | 69.8 | 91.8 | 66.3 | 86.5 |
| $5,000–$5,999 | 63.5 | 65.7 | 88.8 | 67.5 | 69.8 | [2] 62.0 | 85.1 |
| $6,000–$6,999 | 63.7 | 64.4 | 71.6 | 58.1 | 73.9 | | [2] 72.5 |
| $7,000–$7,999 | 65.4 | 69.9 | 76.6 | [2] 65.2 | 77.1 | | |
| $8,000–$8,999 | 68.4 | 55.5 | 67.9 | | [2] 85.8 | | |
| $9,000–$9,999 | 67.2 | [2] 70.3 | 95.5 | | | | |
| $10,000–$10,999 | 60.7 | | 96.9 | | | | |
| $11,000–$11,999 | 73.2 | | [2] 70.0 | | | | |
| $12,000–$12,999 | 65.0 | | | | | | |
| $13,000–$13,999 | 67.6 | | | | | | |
| $14,000–$14,999 | 61.6 | | | | | | |
| $15,000–$15,999 | 60.3 | | | | | | |
| Over $15,999 | [2] 61.4 | | | | | | |

[1] Source: M. M. Daugherty, *The Assessment and Equalization of Real Property in Delaware, Delaware Agricultural Experiment Station Bulletin 159*, December 1928.
[2] Average applies to all properties over value of preceding class.

*Florida.*—In a sample taken in 1923–24 consisting of 807 representative properties (528 urban and 279 rural), it was found that assessment ratio was less than 30 percent of the value for over three-fourths of the properties, but that a few were assessed at over 100 percent. The coefficients of dispersion were 68.92 urban and 69.60 rural. Urban properties worth less than $2,000 were assessed at an average of 27 percent and those over $10,000 at 14 percent. The least valuable rural properties were assessed at 27 percent and the most valuable at 7 percent.

*Illinois.*—Rural assessment ratios ranged from less than 5 percent to over 100 percent in 1927. Urban properties of less than $10,000 were assessed at an average of 44.6, while properties worth $20,000 and over were assessed at only 25 percent.

*Kansas.*—One of the most thorough tests for regressivity which has ever been made was conducted in Kansas. It was based on 20,000 cases and covered the period 1913–22. It "resulted in a finding of a definite, regular, and pronounced tendency for the assessment ratio to vary inversely with the value of the property. Thus, in the case of the farms, properties worth $1,222 on the average were assessed at a ratio of 85.7 percent; those worth $5,588 on the average at 70 percent; those worth $16,956 on the average at 58.7 percent. Similarly in the case of the urban properties the least valuable group were assessed at 97 percent; the most valuable at 69.1 percent."

*Louisiana.*—In a thorough test of regressivity (1925–30) based on a sample of 8,002 properties, it was found that urban properties worth less than $50 were assessed at an average of 176.9 percent; those worth from $501 to $1,000 at 74.0 percent; from $4,501 to $5,000 at 46.5 percent; from $9,001 to $9,500 at 40.7 percent; from $14,501 to $15,000 at 22.4 percent. Rural properties worth less than $50 were assessed at an average of 180.8 percent; those over $15,000 at 47.2 percent.

*Maine.*—The assessment of apple farms (1924–30) ranged from less than 30 percent to more than 70 percent of the true value; blueberry farms, less than 20 percent to more than 100 percent; dairy farms, less than 20 percent to more than 70 percent; potato farms less than 20 percent to more than 70 percent; poultry farms, less than 20 percent to more than 70 percent. It was, moreover, found that properties worth less than $5,000 were proportionally assessed on the average at approximately twice as much as those worth over $45,000.

*Maryland.*—Assessment ratios in Maryland ranged from less than 20 percent to over 200 percent (1925–26). The coefficient of dispersion was 34.9 percent for rural properties and 37.7 percent for urban properties. It was found that farm properties worth less than $1,000 were assessed at an average of over 90 percent, whereas those worth from $1,000 to $5,000 were assessed at 75 percent and those worth over $5,000 at less than 60 percent. Town properties worth less than $1,000 were assessed at an average of 76.2 percent, those from $1,000 to $5,000 at 61.2 percent, and those over $5,000 at 54.5 percent.

*Massachusetts.*—Rural assessment ratios range from under 20 percent to over 100 percent in 1923. "On the average, in the year and towns selected for the test, if one had at random chosen two farm properties worth $25,000, he would have found that instead of both properties being assessed at the 'full fair cash value' required by the law of Massachusetts, one was assessed at $14,400 and the other at $12,600. This is equivalent to one assessment at $28,000 and the other at $22,000 on a 100 percent basis. Moreover, he would have found, had he looked further, some properties worth $25,000 assessed at $10,000, while others worth no more were assessed at $20,000. He might even have found some properties worth this sum assessed at $2,500 and others at $25,000."

*Missouri.*—Assessment ratios varied from under 10 percent to well over 120 percent, in the case of both urban and rural property in 1929. Coefficients of dispersion were 34 percent for rural and 35 percent for urban properties. Properties worth less than $1,000 were assessed at an average ratio of 100.4 percent; those worth between $4,000 and $5,000 at 73.3 percent; while those worth between $9,000 and $10,000 were assessed at 63.1 percent.

*New Jersey.*—A test of assessment inequality made in 1931 based on a sample of 805 expert appraisals in 10 different counties and 8 municipalities showed that the average ratio of the assessed to the appraised value of the land was 37.4 percent with a coefficient of dispersion of 43.9 percent; the building ratio was 55.5 percent with a coefficient of dispersion of 30.4 percent.

Analysis of farm appraisals showed the following results: "Wide variations were found to exist as amongst the average assessment ratios of these 16 counties. The extremes were Atlantic County with an average ratio of 26 percent and Mercer County with an average ratio of 54 percent. Moreover, there were many outstanding examples of inequality within the counties as amongst individual properties.

"For example, one farm in Burlington County was appraised at $35,000 and assessed at $8,900, or 25 percent; another farm in this county was appraised at $8,500 and assessed at $6,400, or 75 percent. In Gloucester County, two properties in one district had a combined value of $20,000 and a combined assessment of $6,000, or 30 percent, while a farm in another district, appraised at $15,000 was assessed at $11,000, or 73 percent. In Monmouth County, one property was appraised at $16,000 and assessed at $3,000, or 19 percent, while another was appraised at $15,000 and assessed at $9,500, or 63 percent."

*New York.*—Inequality and regressivity are pronounced in the rural areas and are probably very prevalent in the smaller cities. Considerable improvement is shown in the larger cities but a ratio test of assessments in 1926 in New York City, which has the reputation of being one of the better assessed cities of the State, shows variations of from less than 35 percent to over 120 percent. Most of the properties are assessed at from 50 percent to 95 percent of true value.

*Ohio.*—Rural ratios were found to range from less than 20 percent to over 171 percent in 1925.

*Oregon.*—Urban properties (sample 1921–26) worth less than $500 were assessed at more than 70 percent; those over $4,900 at less than 50 percent.

*Pennsylvania.*—The analysis of the six counties studied, if they may be considered to be a fair sample of the State, should force one to the conclusion that the present system of making assessments has failed utterly in accomplishing the purpose for which it was set up. Not only is it impossible to secure assessments at the full value which the law requires but it also appears impossible to get assessments made at any uniform rate either throughout a township, town, or county.[18]

*Tennessee.*—Assessment ratios ranged from less than 10 percent to over 100 percent in 1929. The coefficient of dispersion was 35 percent.

*Texas.*—Assessment ratios ranged from less than 10 percent to over 100 percent in the case of both urban and rural properties in 1932. Coefficients of dispersion amounted to 48 percent for rural and 49 percent for urban properties. Rural properties assessed at a ratio of less than 10 percent were worth $10,192.20 on the average; those assessed at from 41 to 50 percent were worth $2,545.73 on the average, and those assesesd at over 100 percent, $1,132.52.

*Vermont.*—It is a matter of common knowledge which the commisssion has had occasion to verify in a number of instances that little, if any, property in Vermont is appraised at its just value in money. The few instances of full value appraisals which have been brought to the attention of the commissioner have arisen either through error or prejudice. Some listers, with a full knowledge of the law, have set up a local standard of real estate valuations based upon a percentage of what they believe to be a fair or market value. Complete facts are not available but from statements of listers and from actual observations and comparisons made by the commissioner it would appear that the range of valuation in the appraisal of real estate in Vermont ranges from 30 percent to 80 percent of actual values. From such so-called standards individual cases range as low as 25 percent and as high as 90 percent of the just value provided by statute. Quotation from the *Biennial Report of the Commissioner of Taxes of Vermont* for the term ending June 30, 1928.

*West Virginia.*—Assessment ratios ranged from 2.22 percent to 596.66 percent in the case of farms; from 0.55 percent to 955 percent in the case of tracts; and from 2.78 percent to 1,500 percent in the case of lots (sample 1928–30). The coefficient of dispersion was 79.09 for tracts; 59.40 for urban properties and 52.33 percent for rural properties. Farm properties worth less than $200 were assessed at an average ratio of 273.08 percent; those worth from $400 to $500 at a ratio of 88.06 percent; those from $1,100 to $1,299 at 72.83 percent; and those from $4,500 to $5,499 at 60.21 percent. Urban properties worth less than $200 were assessed at an average ratio of 102.40 percent and those worth $10,000 and more at 54.16 percent.

*Wisconsin.*—The average assessment ratio in 1927 was 92.43 percent for rural properties; 83.05 percent for village properties; and 72.48 percent for city properties. The average coefficients of dispersion were 16.35 percent rural, 18.91 percent village, and 25.12 cities. "With respect to regressivity, the test met with slightly better results than when applied in most States, but these results were still unsatisfactory."

[18] F. P. Weaver, *Rural Taxation in Pennsylvania*, 1926.

The above data indicate that the assessment of property in the United States is a very imperfect performance. It is true that they are based on samples and are incomplete. The validity of the results is attested, however, by the remarkable similarity of findings. Some States show much worse records than others, but a high degree of variation and regressivity is found in all. The bulk of the valuations are also generally found far below the actual value of the property.

From such sketchy information as is available for the States not enumerated above, it appears that equally bad assessment conditions are also to be found in them.

#### Classification of Property

Real property is classified in various ways for assessment purposes in the different States. Some officials seemingly find it more important to know how valuations differ as among different counties, while others are interested in comparisons between urban and rural valuations, and still others in variations among different types of land classifications, e. g., agricultural, mining, residential, etc.

The Wisconsin classification appears to be the most complete and logical. Assessment totals for cities, villages, towns, and the entire State are compiled for each of the following classifications: Residential, mercantile, manufacturing, and agricultural. In addition, statistics are available for marsh, cut-over, and waste land, and for timber land. Each of the above classifications is further broken down as between land and improvements. In some of the counties of New York State, separate land and improvement figures are available for the following classes of real estate: Residential, mercantile, manufacturing, vacant lots, railroad and public utilities, agricultural, mining, and forest.

The meager classifications employed in some of the other States may be observed in the table on page 294.

#### Land and Improvement Statistics

Thirty-seven States classify land and improvements separately to some extent for assessment purposes. Some official reports contain separate statistics for each county and also, in some instances, for towns and cities. Others give only the figures for total land and total improvements in the entire State. It would be misleading to consider the totals given in this table as representing in every case the total value of land and improvements in a particular State. The statistics in some instances refer to a portion only of the real-estate total.

The following table presents the statistics covering land and improvement values as they are given in the tax reports of the States which record separate assessment figures for the two elements of real estate. No attempt has been made to make the statistics of the

TABLE 11.—*Proportion of land and improvement values*

| State and source | Year | Classification | Land value | Improvement value | Total | Percentage land is of total |
|---|---|---|---|---|---|---|
| Arizona, 12th biennial report of State tax commission, Dec. 31, 1934. | 1934 | City and town lots | $30,965,876 | $61,093,451 | $92,059,327 | 33.6 |
| | | Irrigated | 22,705,339 | 6,553,905 | 29,259,244 | 77.6 |
| | | Dry farming | 5,342,233 | 1,150,272 | 6,492,505 | 82.3 |
| | | Grazing | 7,289,754 | 2,037,752 | 9,327,506 | 78.2 |
| | | Railroad land grants | 2,013,121 | 12,665 | 2,025,786 | 99.4 |
| California, report of board of equalization, 1933-34. | 1934 | Inside municipalities | 1,733,679,632 | 1,507,347,194 | 3,241,026,826 | 53.5 |
| | | Outside municipalities | 1,051,472,370 | 356,304,571 | 1,407,776,941 | 74.7 |
| Colorado, 23d annual report of Colorado Tax Commission, 1934. | 1934 | Town and city lots | 137,497,209 | 253,343,640 | 390,840,849 | 35.2 |
| | | Farm | 227,701,837 | 63,185,220 | 290,887,057 | 78.3 |
| Idaho, proceedings of the State board of equalization. | 1933 | Outside cities | 139,097,813 | 14,581,446 | 153,679,259 | 90.5 |
| | | Business lots | 11,722,508 | 17,298,379 | 29,020,887 | 40.3 |
| | | Residence lots | 12,732,410 | 25,054,704 | 37,787,114 | 33.6 |
| Illinois, 15th annual report of tax commission | 1933 | Town and city lots: | | | | |
| | | Unimproved | 55,693,405 | 551,690,507 | 895,214,482 | 38.5 |
| | | Improved (land only) | 287,830,570 | | | |
| | | Unimproved lands | 77,637,826 | 231,136,740 | 1,137,950,903 | 79.6 |
| | | Improved (land only) | 829,176,337 | | | |
| Kansas, 14th biennial report of tax commission | 1934 | Platted tracts outside cities | 8,268,894 | 14,354,935 | 22,623,829 | 36.6 |
| | | Unplatted tracts in cities and city lots | 171,486,307 | 368,581,497 | 540,067,804 | 31.8 |
| | | Farm | 1,040,691,494 | 131,753,769 | 1,172,445,263 | 88.7 |
| Kentucky, 16th annual report of State tax commission. | 1934 | Town lots | 190,654,170 | 434,226,509 | 624,880,679 | 30.5 |
| Louisiana, 19th annual report of tax commission | 1935 | City lots | 220,998,341 | 326,882,571 | 547,880,912 | 40.3 |
| | | Country lots | 5,850,149 | [1] 59,875,947 | 65,726,096 | 8.9 |
| Maine, report of bureau of taxation, 1933 and 1934. | 1934 | Total | 187,263,445 | 318,053,188 | 505,316,633 | 37.1 |
| Massachusetts, annual report of commissioner of corporations and taxation, 1934. | 1934 | Real estate subject to local assessment | 2,052,199,858 | 3,846,374,747 | 5,898,574,605 | 34.8 |
| Minnesota, report of tax commission | 1934 | Platted (urban) | 513,829,936 | 1,069,552,370 | 1,583,382,306 | 32.4 |
| | | Unplatted (rural) | 1,227,778,552 | 340,193,287 | 1,567,971,839 | 78.3 |
| Montana, 6th biennial report of State board of equalization, July 1, 1932, to June 30, 1934. | 1934 | City and town lots | 60,052,498 | 149,599,628 | 209,652,126 | 29.1 |
| | | Other land | 341,881,044 | 196,538,720 | 538,419,764 | 63.5 |
| New Jersey, 4th annual report of State tax department, June 30, 1935. | 1935 | Total for State | 1,899,777,130 | 3,121,081,603 | 5,020,858,733 | 37.8 |
| New York, report of State tax commission | 1934 | New York State (including greater New York) | 10,935,955,655 | 14,661,869,049 | 25,597,824,704 | 42.7 |
| | | Greater New York | 7,659,200,156 | 8,990,571,043 | 16,649,771,199 | 46.0 |
| | | Separate land and improvement figures for 11 counties (Erie, Essex, Genesee, Greene, Monroe, Onondaga, Saratoga, Schoharie, Steuben, Ulster, Washington): | | | | |
| | | Residential | 399,346,839 | 960,496,056 | 1,359,842,895 | 29.4 |
| | | Mercantile | 265,888,885 | 286,962,880 | 552,851,765 | 48.1 |
| | | Manufacturing | 43,059,973 | 169,169,912 | 212,229,885 | 20.3 |
| | | Vacant lots | 73,380,993 | | | |
| | | Railroad and public utilities | 70,664,470 | 238,801,718 | 309,466,188 | 22.8 |
| | | Agricultural | 70,918,430 | 85,005,353 | 155,923,783 | 45.5 |
| | | Mining | 2,031,529 | 3,178,246 | 5,209,775 | 39.0 |
| | | Forest | 2,950,086 | | | |
| Oklahoma, report of tax commission, Nov. 1, 1934 | 1934 | Town lots | 146,247,600 | 210,706,945 | 356,954,545 | 40.9 |
| | | Other lands | 358,885,474 | 47,739,522 | 406,624,996 | 88.3 |
| Rhode Island, fifteenth report of board of tax commissioners, 1933-34. | 1934 | Total | 300,866,473 | 652,177,211 | 953,063,684 | 31.6 |
| South Dakota, annual report of division of taxation, 1934-35. | 1935 | City and town lots | 44,092,403 | [2] 64,019,238 | 140,923,981 | 31.3 |
| | | | | [3] 32,812,340 | | |
| | | Outlets within corporate limits | 1,071,134 | [2] 2,109,767 | 3,583,813 | 29.9 |
| | | | | [3] 402,912 | | |
| | | Agricultural lands within corporate limits | 3,090,776 | [2] 1,377,922 | 4,480,848.69 | 69.0 |
| | | | | [3] 12,150.69 | | |
| | | Agricultural lands outside corporate limits | 568,907,574 | [2] 57,991,099 | 627,921,184 | 90.6 |
| | | | | [3] 1,022,511 | | |
| | | Mineral lands | 6,206,965 | [2] 166,406 | 11,094,481 | 55.9 |
| | | | | [3] 4,721,110 | | |
| Utah, second biennial report of State tax commission, 1933-34. | 1934 | Town or city lots | 69,091,094 | 108,424,400 | 177,515,494 | 38.9 |
| | | Agricultural or grazing | 75,576,828 | 24,704,941 | 100,281,769 | 75.4 |
| Virginia, report of department of taxation, June 30, 1934. | 1934 | Cities | 283,765,808 | 389,896,219 | 673,662,027 | 42.1 |
| | | Other land and timber | 246,525,451 | 168,039,693 | 414,565,144 | 59.5 |
| | | Town lots | 19,272,575 | 50,727,096 | 69,999,671 | 27.5 |
| | | Mineral lands | 5,945,739 | 6,898,038 | 12,843,777 | 46.3 |
| Washington, fifth biennial report of tax commission, Sept. 30, 1934 | 1934 | City and town lots | 169,824,944 | 230,421,946 | 400,246,890 | 42.4 |
| | | Other land | 232,761,500 | 59,578,424 | 292,339,924 | 79.9 |

[1] Agricultural implements and farm improvements exempt to value of $500 for each taxpayer. [2] Residential. [3] Business.

TABLE 11.—*Proportion of land and improvement values*—Continued

| State and source | Year | Classification | Land value | Improvement value | Total | Percentage land is of total |
|---|---|---|---|---|---|---|
| Wisconsin, report of tax commission, 1934 | 1933 | Agricultural | $683,442,105 | $328,367,770 | $991,809,875 | 66.9 |
| | | Marsh, cut-over or waste | 110,443,116 | 3,148,089 | 113,591,205 | 97.2 |
| | | Residential | 468,076,445 | 1,016,721,161 | 1,484,797,606 | 31.5 |
| | | Mercantile | 249,763,409 | 345,727,472 | 595,490,881 | 41.9 |
| | | Manufacturing | 51,224,773 | 244,304,894 | 295,529,667 | 17.3 |
| | | Timber | 40,117,528 | 1,077,431 | 41,194,959 | 97.4 |
| | | Total: | | | | |
| | | Cities | 655,606,580 | 1,324,053,932 | 1,979,660,512 | 33.1 |
| | | Villages | 65,369,164 | 172,596,292 | 237,965,456 | 27.5 |
| | | Towns | 862,091,632 | 442,696,593 | 1,304,788,225 | 66.1 |
| | | Total | 1,583,067,376 | 1,939,346,817 | 3,522,414,193 | 44.9 |
| Wyoming, eighth biennial report of State board of equalization, 1933–34. | 1934 | Town lots | 14,620,018 | 37,888,107 | 52,508,125 | 27.8 |
| | | Other land | 66,162,032 | 15,032,546 | 81,194,578 | 81.5 |

various States comparable. This would be an extremely difficult, if not impossible, undertaking.

Perhaps the one thing that stands out most clearly from the statistics collected is that land values show a much larger proportion of the total real estate values in rural than in urban communities. It should be borne in mind, however, that value of improvements on farm-land merges with the land value much more inextricably than in the case of urban real estate.

It must also be remembered that the efficiency of assessors and assessment technique vary markedly in the different States. Disregarding such discrepancies in the data, it appears that the value of land amounts to from 70 to 90 percent of agricultural real estate and from 30 to 50 percent of city realty.

Accurate statistics concerning land and improvement values are fundamental to a consideration of taxing real estate and are also highly important from the standpoint of determining the blighted areas of a city. When improvement values are less than land values in a congested central portion of a city, a strong presumption of blight exists.

For example, improvement values exceed land values in approximately four-fifths of the census tracts of Boston. The ratio for the entire city is roughly one to one. Seventeen of the twenty-six tracts in which improvement values are less than land values appear to have all the major characteristics of blight.

The existing discrepancy between building and land values in the case of the old-law tenements of New York is disclosed by a recent W. P. A. survey, under the direction of Walter Fairchild, of 25,815 old-law tenements in New York City. The location of these tenements corresponds closely to the areas which have been characterized as blighted in city surveys. The land on which these tenements stand was assessed at $508,163,800 in 1936. The buildings themselves were assessed at $259,269,000. Improvement values outrun land values in most cities, as can be seen from table 11. They are approximately equal in Manhattan. The land on which these old-law tenements stand, however, is assessed at approximately twice as much as the buildings.

#### Exemption Statistics

The paucity of assessment statistics concerning exempt property may be observed from tables 8 and 9. Such property is frequently not assessed at all, or if assessments are made, they are carried out infrequently and casually. It seems highly desirable that at stated periods, which need not necessarily be as frequent as in the case of taxable property, there should be a complete inventory of all exempt real estate—both governmental and otherwise.

### Assessment Administration

Defects in the assessment data are due to four major weaknesses in administration: inefficient personnel, undersized assessing areas, failure to adopt scientific methods, and lack of adequate appraisal tools.

#### Personnel and Size of Assessment Units

The equitable assessment of real estate demands not only scrupulous integrity, but also a high degree of technical efficiency. Such efficiency cannot reasonably be looked for on the part of an official engaged in assessing for only a few weeks of the year. Nor can the electorate be wisely trusted to choose an official with the proper technical qualifications. Yet most of the assessment units are too small to justify the full-time activity of the assessor, and most of the officials are still selected according to their abilities as vote getters rather than their efficiency in appraising property.

Assessors are elected in 40 of the States. In 6 of these, the assessors of certain towns or cities are appointed. The assessor's term of office is limited to 1 or 2 years in 17 States. He may, however, be re-

TABLE 12.—*Prevalence of small assessment units*

| State | Assessment unit | Number of units in State |
|---|---|---|
| Alabama | County | 67 |
| Arizona | do.[1] | 14 |
| Arkansas | do | 75 |
| California | do.[1] | 57 |
| Colorado | do | 62 |
| Connecticut | Town or city | 169 |
| Delaware | County (plus Wilmington and 10 districts). | 14 |
| Florida | County | 67 |
| Georgia | do | 159 |
| Idaho | do | 44 |
| Illinois | do | 102 |
| Indiana | do.[2] | 92 |
| Iowa | Town or city | 1,600 |
| Kansas | County | 105 |
| Kentucky | do | 120 |
| Louisiana | Parish | 64 |
| Maine | Town | 498 |
| Maryland | County [3] | 23 |
| Massachusetts | Town and city | 355 |
| Michigan | do | 1,268 |
| Minnesota | do | 1,973 |
| Mississippi | County | 82 |
| Missouri | County or town | 114 |
| Montana | County | 56 |
| Nebraska | County and precinct | 93 |
| Nevada | County | 17 |
| New Hampshire | Town and city | 224 |
| New Jersey | do | 235 |
| New Mexico | County | 31 |
| New York | Town and city | 932 |
| North Carolina | County | 100 |
| North Dakota | Township | 1,470 |
| | City and village | 333 |
| Ohio | County | 88 |
| Oklahoma | do | 77 |
| Oregon | do | 36 |
| Pennsylvania | Town, ward, and borough | 1,574 |
| Rhode Island | Town and city | 39 |
| South Carolina | Tax district | ---------- |
| South Dakota | Town and city | 1,172 |
| Tennessee | County | 95 |
| Texas | County and city | 254 |
| Utah | County | 29 |
| Vermont | Town | 240 |
| Virginia | County and city | 100 |
| Washington | County [4] | 39 |
| West Virginia | do | 55 |
| Wisconsin | Township and city | 1,280 |
| Wyoming | County | 23 |
| Total | | 15,716+ |

[1] Some cities have separate assessors.
[2] Township assessors only in townships of over 5,000 population.
[3] Except Baltimore and certain other cities and towns.
[4] Township assessors in two counties.

elected to succeed himself. In only 1 state is the term longer than 4 years. Georgia has a 6-year term. The length of term varies in several States.

Some idea of the existing prevalence of small assessment units may be obtained from the following table. The data for the first column were obtained from the table on Taxation of Real Property in the 1936 edition of *Tax Systems of the World*. Data on the number of units in each classification were obtained from the study of Realty Tax Delinquency by the Bureau of the Census.

The small unit justifying only a part-time official, the practise of electing assessors, and the short terms of office are fundamental obstacles to the securing of efficient assessment officials.

Efficiency of procedure is further impeded by the lack of adequate assessment tools and by the failure to develop appropriate methods of assessment or to utilize those developed by more progressive officials.

Every assessor's office should be supplied with tax maps. Where possible, these should be made by aerial photography. There should be well-devised forms for the recording of individual property appraisals. An assessor could easily obtain samples of forms used by assessors in other cities. Some of the more up-to-date assessment offices have labor saving machines for the recording of assessment data. For the most part, however, obsolete and time consuming methods of record keeping are employed.

No less important than the tools are the assessment techniques which are employed. Notable progress in developing scientific appraisals has been made by a few of the more outstanding assessment officials.

### The Unit Rule

One of the most outstanding achievements, for example, has been the development of the unit rule in the valuation of land. A strip of land one foot wide and of ordinary lot depth (usually 100 feet) is considered the standard physical unit. Front-foot values based on sales and other data are assigned the various city blocks. The front half of the strip is considered more valuable than the remainder and is usually valued at two-thirds of the whole. Adjustments for lots of greater or less than standard depth are made on the basis of a depth table which has been constructed for such a purpose. Certain adaptations of the formula have been made with respect to corner lots. The use of such tables removes much of the guesswork from the assessment of land.

The unit rule marked a distinctly forward step in assessment procedure, but it does not appear equally applicable to all kinds of land, and it seems desirable that other methods be devised with respect to the appraisal of certain types of property.

These unit-rule systems grew up in the large cities of the country before the spread of modern zoning ordinances or at just about the sime time. The unit-foot value of frontage was thus a product of the period in which the full convertibility of land was universally assumed. Every dwelling site on a main thoroughfare was regarded as potentially capable of development later into a store front. The street frontage and that alone was presumed to confer substantial value, and the unit-foot rules were therefore adopted without question.

Within the last 20 years—that is, since the adoption by the city of New York of the first comprehensive zoning regulations in 1916—zoning ordinances have spread all over the country and have sought to bring to land use a stability and a resistance to undesirable change that were undreamed of when the unit-foot rules were first promulgated. A new and significant element has therefore been introduced into the whole problem.

For an area dominantly residential in character, controlled by a strict zoning ordinance, the prevalent method of assessing on the basis of unit *front-foot* values may not be wholly appropriate. The unit front-foot value method arose not only before the advent of zoning ordinances but flourished in cities whose dominant pattern was the checkerboard plan, with narrow frontages and standard depth lots. Thus, not only corner lots but inside lots were potentially convertible for future business or other more intensive uses. However, a high-class residential suburb, or village, with its pattern better adjusted to topography and with its irregular lots dictated by winding streets presents a wholly different situation. With the permanence of development given as much assurance as is possible, every part of a spacious lot becomes just as important a part of the whole landscape frame of the dwelling as any other part, and the theory that the front half equals in value two-thirds of the whole falls down utterly.

It is not beyond the realm of possibility that the unit square-foot basis may become the standard for assessment of suburban residential real estate, whenever the latter is protected by zoning ordinances with any degree of stability. This method is now being employed in the village of Scarsdale, N. Y.

Because of these fundamental facts, the methods we have heretofore been accustomed to call "scientific" may become outmoded, insofar as zoned residential property is concerned. Certainly, the square-foot method is simplicity itself. The practice of adding a factor of value for residential property located on corner lots has always been a moot question. Gain in light is offset by noise of traffic, sidewalk repair, snow removal, and loss of privacy. It is a grave question whether the corner site in a properly planned residential area really confers any benefit or not.

Realization of these facts is also indicated in an admirable report published by the assessor of Bridgeport, Conn., in 1926.[19] "In many cities the standard depths of residence and business lots differ and therefore it is usually and theoretically more accurate to have a depth percentage table for each type based upon the respective standards." This is only a partial recognition of the basic dissimilarity that is intensified by stable zoning ordinances, but precedents for differentiation have been established and could be extended.

The Bridgeport report is noteworthy for its concise discussion of principles and practices as to unit values, depth percentages, corner influences, irregular lots, and other lessor factors. It is a pity that the document is out of print and, therefore, not generally available.

Because frontage is of comparatively little moment in industrial properties, the square-foot measure is already applied, even in many cities that adhere strictly to the unit front-foot as a basic measure for all other property. As in a properly spacious residential section, area is what counts in industrial properties, so there is a genuine likelihood that, in the next decade or so, the unit front-foot method which has been evolving for 70 years may thereafter find its utility mainly in the computation of values for business properties.

Some intermediate basis seems desirable for the assessment of apartment property.

Most of the assessors, in the questionnaire referred to below, reported the use of the unit-foot basis for all residential land. Some specified that it was used for all land except manufacturing property. In one city, a unit-foot basis was used in assessing residential land in the center of the city, and a square-foot basis was used in the suburbs.

#### Relation of Zoning to Assessments

A further problem in real-estate assessment is presented by the effect of the zoning ordinance upon assessment. It is argued, on the one hand, that our present zoning ordinances are extravagant in their provisions for intensive land use and that to base assessments on zoning would result in inequitable and uncollectible levies. It is argued, on the other hand, that an adjustment of assessments in relation to zoning would tend to prevent property owners from clamoring to have their property rezoned for a more intensive use when it was not ripe for such use.

The assessor is legally supposed to assess property on the basis of market value. In assessment cases, the courts would scarcely uphold slavish adherence to zoning provisions in fixing values when such provisions bore no relation to actual conditions. In those cities where zoning regulations have been carefully drawn in conformity with actual needs, the zoning ordinance should, however, be of material assistance in determining property values.

In connection with this study a letter containing the following questions was sent to 25 of the leading assessment officials in the country:

1. When land is rezoned for a higher use are assessments increased immediately?

[19] *A Plan for the Taxation of Property in the City of Bridgeport*, State of Connecticut, Public Document, Special Taxation, Document No. 216, January 1926.

2. To what extent do you take the zoning ordinance into consideration in making assessments?

3. In assessing residential property, do you use a unit-foot or square-foot basis?

(*a*) In the center of the city: Single-family dwellings and apartment houses.

(*b*) In the suburbs: Single-family dwellings and apartment houses.

Sixteen replies were received. No zoning ordinances were in effect in three of the cities. Five assessors did not immediately increase assessments as a result of a zoning change. One respondent replied that assessments were increased immediately; others that assessments were increased at the next assessment period. Other replies to the first question were as follows:

When land here is rezoned for a higher use it usually results in a higher value for that land, and such value is reflected in the assessment following such rezoning. On the other hand, and while I do not have a specific case in mind, it is conceivable that a lessening of zoning restrictions may have the opposite effect.

Not necessarily—fair market value would govern. If there is relatively little land for the "higher use" and there is a demand, the value enhancement would be recognized. All zoning changes are considered from the viewpoint of whether or not there has occurred any increase or decrease in value.

Increases are made when sales or incomes indicate higher values.

Replies to the second question were as follows:

Zoning is an important element in real-estate value. As assessing laws provide that property for taxation purposes shall be valued at the fair market value it becomes necessary to give full consideration to zoning restrictions.

When values rise due to zoning, we take consideration of such rises in making our assessments, otherwise not. Assessments in this State are based primarily on sales. In the absence of sales, incomes or other factors may be taken into consideration.

Very seldom does change affect values.

First consideration, sales asking prices and rents, then zoning modified by predominate use of land.

Land values are fixed in accordance with the evidence of sales, long-time leases, asking prices, temporary rentals, etc. It is necessary, however, to take into consideration the zoning ordinances as they affect the value of the improvement. In other words, property used for residential purposes perhaps is subsequently zoned in favor of apartments—this increases the land value because of its added availability, but it also decreases the value of the residential structure thereon. It is necessary that the assessments do not exceed the increased value of the land and the resulting decreased value of the building.

A zoned business lot we increase above a resident lot.

This depends upon how much the change affects the value of the property, in special cases it might increase the value from 10 percent to 500 percent.

When residential property is zoned for business purposes, the land values are not increased until the property is actually used for business purposes. When the district becomes 75 percent business usage, the remaining residential is then increased to business valuations.

It is a direct factor inasmuch as that it regulates the utility.

Only taken into consideration in revaluation year.

None.

Little if any, in cities of this size. I don't believe zoning is as definite as in larger communities. In other words, industrial or business districts are not as confined and therefore do not demand as high a value.

**State Control Over Local Assessments**

Theoretically, most of the States exercise some control over local assessments. Actually, State control, except in a few instances, has been ineffectual in the improvement of assessments.

State equalization of local assessments has been the chief method employed for the control of local assessments. It is used, however, chiefly for the equalization of the State levy on property and frequently does not affect local levies at all. As the States tend to rely less and less upon the property tax for their own revenues, interest in property assessments lags correspondingly.

Joseph D. Silverherz, in his recent study of the *Assessment of Real Property in the United States*, comes to the following conclusion:

The nature and extent of State supervision and control of assessments vary as among the various States. So, too, does the administrative competency of local assessing officials. On the average, however, the State, which has kept up with the technological advance of the country, does not participate very energetically in the matter of real-estate assessment. On the other hand, the localities, to which the task of assessment has been entrusted, are, with the exception of the larger cities, lagging far behind in the matter of modern, technical, efficient administration. The result is that the tax administration of the most important source of local revenue, and a substantial source of State revenue in many States, is not adapted to its task under modern conditions.

Mr. Silverherz proposes as a solution:

A State reassessment and installation of adequate systems in each of the counties, to which the function of assessing would be transferred, coupled with a policy of vigorous State supervision and control, utilizing the mechanism of conditioned State aid for the maintenance of high standards, would substantially improve assessment conditions. * * *

With "local familiarity" seen to be more of a disadvantage than an advantage under present conditions, and "bureaucracy" not an inherent characteristic of centralized administration but avoidable by competent, adequate organization, the chief ground for the recommendation of the complex system of State reassessment and installation of systems, vigorous State supervision, and change of assessment unit, is that it preserves local administration. But we have already seen that the transfer of this function to the State would involve no legitimate loss of local self-government. With the objections to State administration thus seen as of insubstantial weight, the positive advantages of this plan are so great that the decision should be wholeheartedly awarded to it. It provides the greatest relative degree of disinterestedness. It offers the easiest way to technical, competent personnel. It offers the possibility of the setting up of districts suited to maximum efficiency of assess-

ment. It offers possibilities of economies in the way of optimum functional, as well as regional, division of labor, by making it possible to have specialists for special types of properties. It offers economies in optimum temporal adjustment: instead of either too frequent assessments or rigid, arbitrarily set long intervals applicable in a crude average way to the entire State, it allows flexibility of adjustment of assessment to economic value changes when and where they occur. It offers economies in the setting up of an administrative appeal process. It does away entirely with the duplicatory wastes of multiple equalization boards and duplicatory assessment by town and village officers. It offers the possibility of maximum efficiency in the preparation of tax rolls by modern labor-saving machines. In short, it offers the opportunity to handle the function with maximum impartiality and optimum efficiency.

### Special Assessments

The special assessment occupies a prominent role in urban financing, city planning, and real-estate development. It is a method whereby the cost of a particular public improvement is assessed wholly or partly against the property holders supposedly benefiting from the project.

The practice is widely followed in our American cities. All of the first- and second-class and almost all of the third-class cities in New York make extensive use of special assessments. Special assessments and special charges for outlays were reported for 300 of the 310 cities in the United States of 30,000 population or over in the 1930 *Financial Statistics of Cities*, published by the Bureau of the Census. They were collected in the majority of the cities for the construction of sewers, paving, curbing, and sidewalks, and in some cases for the grading and widening of streets, the building of retaining walls, bridges, and viaducts, and for park improvements.

Similar statistics for such a wide range of cities are not available for later years, but special assessments were reported for 90 of the 94 cities of 100,000 population or over in the 1934 *Financial Statistics of Cities*. Approximately 7 percent of the average city budget was derived from special assessments in 1930. The depression apparently affected this ratio markedly, as in 1934 the average was only 2.2 percent in the same group of cities. Averages mean little, however, for in both years the percentages varied as among different cities from less than 1 percent to more than 20 percent.

Kansas City and Minneapolis afford good examples of the current reliance upon special assessment. The following improvements in Kansas City are most frequently paid for by special assessments: paving, repaving, curbing and guttering, sidewalks, grading, street openings, street widening, sanitary sewers, storm sewers, parks and playgrounds. An additional assessment is made by districts for the operation and maintenance of parks and boulevards at $2.50 per $1,000 of assessed valuation of land. There is, moreover, an annual assessment of 10 cents per front foot of all property fronting on boulevards.

Minneapolis found itself handicapped in undertaking city developments in line with the growing needs of the city. In 1910, legislation was passed providing for the special-assessment principle in the opening and improving of streets, the acquisition and complete improvement of parks, parkways, playgrounds, and public squares. Benefits were assessed over any area of property thought by the council or its agents to be benefited, and the payment of a portion of the cost, not to exceed one-third of the total, was assessed against the city at large.

By the use of this plan, the city appears to have been extremely successful in building up a civic center and also in fostering the growth of a prosperous residential district.

Undoubtedly, the special assessment has been a successful instrument in the physical development of our cities and has been more equitable for this purpose than financing by means of a general city levy.

Recognition of the fact that certain public improvements confer a direct benefit measured by enhancement of property values on particular property holders has constituted an important step forward. The use of the special assessment method of financing has enabled cities to develop so as to keep pace more nearly with their needs than would have been possible otherwise. It has been much fairer to defray a substantial part of the costs of such improvements by a special levy on the property benefited than by general taxation.

The system has many shortcomings, however, and has lent itself to abuses. Under the special-assessment system, the city can never recoup from the property holders more than the cost of the improvement, even though resulting increases in value are many times that amount. The cost, or a portion of the cost, is apportioned among the property holders who, it is expected, will benefit from the project, on the basis of estimates concerning their proportionate share of the expected benefits. It is impossible to calculate such benefits accurately, and frequently the estimates are scarcely more than guesses. The distribution of the special-assessment burden often differs markedly from the actual distribution of property-value enhancements.

Property holders who are not subject to the assessment may benefit to a considerable extent. Others who have paid the assessment may find that they have received no benefit. In extreme cases, they may even have suffered a detriment. Moreover, since the assessment is payable before the benefits have accrued, it frequently imposes a hardship upon the owner.

Some students of government have felt that the widespread use of the special assessment principle has

incited municipalities to extravagance and excessive debt. Strong evidence of this nature was found in a study by Phillip H. Cornick [20] of the special assessment situation in the local governments of New York State, as described below:

Under the provisions of the general town law as it existed when the rights to use special assessments were conferred on the towns, a difficult situation has been created by the very large delinquencies in special-assessment collections during the past 3 years. The special-assessment levies are extended on the town rolls for general and special-district taxes. When the warrants issued to town collectors expire, the rolls are "returned" to the county treasurers who thereupon pay over to the town officials designated in the warrants sums sufficient to meet town requirements. In other words, in the towns operating under the general town law, the county treasurer assumes the liens for delinquent special assessments, and, in return, pays over sums sufficient to meet interest and retirement charges on the special-assessment bonds issued by the towns, plus—in many instances—a 2-percent fee to the collectors on the current levies which they had failed to collect. The amounts of the delinquencies in several towns have assumed such proportions that they far exceed any sums which the country treasurers have available for making such advances. * * *

The question at issue is this: Shall the taxpayers of the county as a whole be called on to make good the deficits created by uncollectible special assessments, or shall that burden be assumed solely by the taxpayers within the boundaries of the town which authorized the bonds? It is manifestly unjust that the taxpayers in the county at large should be called on to assume a pledge of full faith and credit in support of bonds issued to finance public improvements in one or more towns of that county. On the other hand, the already high rate of delinquency in general taxes in the towns where the largest delinquencies in special assessment collections have manifested themselves makes defaults in bonds almost inevitable unless the county taxpayers are required to assume the burden. Here is a dilemma, growing inevitably out of the grant to town governments of the unlimited right to issue special assessment bonds, which permits of no just solution. It therefore behooves the legislature to formulate a policy designed to produce a minimum of aggregate injustice among the interests affected: the municipalities of the State as a whole whose credit would be injured if any municipalities were allowed to default; the taxpayers of the towns in which the defaults impend; the taxpayers of the counties in which those towns lie; and the holders of the bonds whose investments are endangered.

[20] *Report of the New York State Commission for the Revision of the Tax Laws, 1932*, pp. 135–145.

The defects of the special assessment system are clearly revealed in a recent field study comparing assessments with the actual increases in value which later took place. It is unfortunate that there are not many such studies available for various cities. Investigations of this nature make it possible to analyze the good and bad points of a system and to plan a more efficient course of procedure.

The study was conducted by the Brooklyn College Bureau of Economic Research under the direction of Dr. Edwin H. Spengler. Statistical data for the 20 years from 1915–34 inclusive were examined for 9,817 lots in the Flatbush area of Brooklyn. Over 3,000 of these parcels had no special assessment of any kind levied against them, and these properties rose in value by from 10 percent to more than 300 percent of their 1915 valuations.

On the other hand, there were 116 lots which either suffered decreases in value or remained static in value during the same 20 years, against which were levied sizeable assessments for local improvements. Between these two extremes were several thousand parcels which showed gains in value of from 50 percent to over 300 percent, against which were levied special assessments ranging from less than one-tenth of one percent to more than 30 percent of these value increments.[21]

The following table taken from the above study shows the ratio of special assessments to land value increments.

It is apparent from an inspection of the table that, in about one-third of the lots (3,303), there were increments of value but no special assessments during the 20-year period. In 751 cases, the assessments ranged

[21] "The Increment Tax Versus Special Assessments," by Edwin H. Spengler. Reprinted from *Bulletin of the National Tax Association*, June and October 1935 and March and May 1936.

TABLE 13.—*Ratio of special assessments to land value increments (1915–34)* [1]

[Percentage that aggregate assessments are of aggregate increments] [2]

| Value [3] | Missing [4] | | 0 percent [5] | | 0.1–1 percent | | 1.1–5 percent | | 5.1–10 percent | | 10.1–100 percent | | Number of cases [6] | Percent at total [6] | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of cases | Percent of total | Number of cases | Percent of total | Number of cases | Percent of total | Number of cases | Percent of total | Number of cases | Percent of total | Number of cases | Percent of total | | | Number of cases | Percent of total |
| $1–$5,000 | 30 | 0.36 | 2,908 | 35.52 | 486 | 5.94 | 648 | 7.92 | 370 | 4.52 | 3,650 | 44.59 | 94 | 1.15 | 8,186 | 100 |
| $5,001–$10,000 | -------- | -------- | 314 | 26.14 | 124 | 10.33 | 198 | 16.49 | 267 | 22.23 | 277 | 23.06 | 21 | 1.75 | 1,201 | 100 |
| $10,001–$100,000 | -------- | -------- | 79 | 18.50 | 141 | 33.02 | 115 | 26.94 | 67 | 15.69 | 24 | 5.62 | 1 | .23 | 427 | 100 |
| $100,001–$200,000 | -------- | -------- | 2 | 66.67 | 0 | 0 | 1 | 33.33 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |

[1] Both special assessments and value increments are calculated as cumulative figures for 20 years. Value increments are calculation from 1915 to the peak year for each parcel.

[2] Properties are classified according to 1934 land values.

[3] Percentages are computed by dividing aggregate assessments by aggregate increments in value.

[4] Amounts of special assessments unobtainable due to condition of records.

[5] These represent cases in which there were value increments but no local levies. In several cases where there were neither assessment levies nor value increments, and the fraction was 0/0, the result was taken as zero.

[6] Infinity; i. e. in cases where there were assessment levies, but no value increments.

from 0.1 percent to 1 percent of the aggregate increment; in 962 cases, from 1 to 5 percent of the increment; in 704 cases, from 5 percent to 10 percent; in 3,951 cases, from 10 percent to 100 percent; in 116 cases, there were assessment levies but no value increments.

Large numbers of lots, particularly among the lower valued properties, were completely exempt from local assessments. However, among the cases in which assessments were actually levied there was a pronounced tendency to place relatively greater burdens upon low valued lands and lesser burdens upon properties of high value. Thus, approximately 33 percent of parcels valued in excess of $10,000 had local levies of only 0.1 percent to 1 percent of their aggregate increments in value, while only 10.3 percent of properties having values of $5,001–$10,000 had burdens of the same proportion. For properties falling below $5,000 in value, only 6 percent had levies of less than 1 percent of their increments. On the other hand, more than 44 percent of these latter properties paid assessments amounting to more than 10 percent of the aggregate increment, while less than 6 percent of all properties valued over $10,000 suffered local levies of this size.

Although the special assessment is a crude tool, it has served a valuable purpose and should be retained until some more satisfactory substitute, or substitutes, can be utilized.

It appears that some combination of an increment tax on land values, an annual land value tax, and excess condemnation, all of which are discussed elsewhere in this report, might prove to be such a substitute.

## Real Property Tax Limits

The rigid over-all tax limit has constituted a recent and striking phenomenon in the field of real-estate taxation. Limits on the rate of tax have existed for a long period, but for the most part, they have been relatively easy restrictions with little effect.

The rigid over-all limit emerged in the early 1930's as a depression phenomenon and, for a while, threatened havoc to orderly processes of local government. The movement appears to have been somewhat stemmed during the last 2 years, although organized real-estate groups are still making determined and vigorous efforts to write such limits into constitutions. The tax-limit drive seems to have been actuated by the devil-take-the-hindmost spirit which has manifested itself with respect to taxation among numerous groups during the last few years.

Rightly or wrongly, certain groups feel that they are discriminated against in tax matters, or, perhaps, they just sense their group power and seek by constitutional amendment to put themselves in the legally untouchable class so far as taxation goes. Whether or not there is merit in the contention of such groups that they should be untaxed, or at least that their tax load should be lightened, it is nevertheless a dangerous precedent to create special classes which shall be legally privileged.

For the sovereign people deliberately to yield up their power of taxation seems an amazing thing, and yet, in essence, that is what the tax-limit movement means. Property is removed, wholly or partially, from the field of taxation, and the duly elected representatives of the people are without the power to tax it for the purpose of carrying on government. This movement has not been wholly restricted to realtors but has spread to some extent to other groups of taxpayers. Although most of the proposals specify limits to the property tax, some go so far as to advocate its entire abolition.

Even though the results of tax limitation were desirable—and experience tends to prove the reverse—there is no excuse for embedding them in the State constitutions. At most, they should be merely statutory provisions.

### Experience with Tax Limits

Forty-one States have enacted limits of one kind or another on real property tax rates.[22] Most of these laws antedate the depression and are relatively mild in nature. In some instances, the limits apply only to rates for some particular expenditure of some particular local government.

The depression ushered in the rigid over-all tax limit which specified that the combined rate for all State and local purposes should not exceed a prescribed maximum. Although Ohio had had some experience with such a limit since 1910, the movement for rigid over-all limits may be considered primarily a depression phenomenon. The idea of a rigid limit beyond which the tax rate could not possibly rise appealed to harassed property holders, who saw incomes shrinking and taxes mounting, as the simple and practical solution of their difficulty.

TABLE 14.—*Over-all limits on property taxes*

| State | Date | Citation | Rate of limitation |
|---|---|---|---|
| Georgia [1] | | | |
| Illinois [2] | | | |
| Indiana | 1932 | Laws (1932), ch. 10, HB. 287 Laws (1937). | Rural limit 1¼ percent; urban limit 2 percent. County tax-adjustment boards created to distribute tax rates, reduce budgets and by ⅝ vote declare emergencies in excess of limit. Allocation may be revised by State tax commission. |

[1] Defeated November 1936.

[2] Illinois Juul law of 1901 established 1 percent over-all limitation. Exceptions have been so numerous that tax limitation is practically nonexistent. Applies now to only 1 local unit, Cook County, and is insufficient for practically every tax levy there.

[22] A table of these rates may be found in the December 1933 bulletin of the Tax Policy League, revised January 1936.

TABLE 14.—*Over-all limits on property taxes*—Continued

| State | Date | Citation | Rate of limitation |
|---|---|---|---|
| Indiana | 1933 | Laws (1933), ch. 237 | Prior debts exempted. |
| | 1935 | Statutes | Additional appropriations automatically referred to State board of tax commissioners. |
| Michigan | 1933 | Constitution, art. X, sec. 21. | Limit 1.5 percent. Prior debts exempted. Permit 5 percent increase of assessed valuation if ⅔ vote approves or if in municipal chart. |
| | 1933 | Laws (1933), ch. 59½, art. 62. | (1) Creation of county tax allocation board, 5 members, (2) Board to apportion millage among county units (minimum rates to be 1/10 of 1 mill for charter cities, 3 mills for county, 4 mills for school district, 1 mill for township; (3) Dissatisfied local units may appeal to State tax commission for rate readjustment. |
| | 1933 | *School district of Pontiac* v. *City of Pontiac*, 262 Mich. 338 (1933). | Levy on property for state purposes repealed. Home rule cities having separate limit in their charters exempt from over-all limit but may be adopted by referendum. |
| Nevada | 1936 | Constitution, art. X, sec. 2. | 5 percent. |
| New Mexico | 1933 | Constitution, art. 8, sec. 2. | 2 percent over-all limit, except specific classes of property and public debt. 0.4-percent limit on State, except for support of educational, penal, charitable institutions of the State. State can go up to 1 percent. Limit on cities 0.5 percent; on counties 0.5 percent; on schools 1.8 percent. Majority of electors in the taxing district concerned can raise the limit, if authorized by legislature. |
| Ohio[3] | 1932 | Constitution, art. XII, sec. 2. | 1 percent over-all limit. Chartered municipalities (if charter contains specific limit) exempt; also rates levied for service on prior debts exempt. County budget commission approves budget of tax districts. Increase permitted by majority of electors in taxing districts. State tax commission may revise allocation. |
| | 1935 | *Portsmouth* v. *Kounts*, 129 O. S. 272, Supreme Court of Ohio. | Decision: A constitutional provision imposing a tax limitation, by implication also imposes a debt limitation. Debts no longer exempt from 1-percent limit. |
| | 1935 | Amendment to uniform budget acts. | Budget commission must levy a minimum of ⅔ of average taxes for operation for the previous 5 years, in each policical subdivision. If this amount does not permit the payment of debt service within the 1-percent limit then commission must reduce operating levy to permit payment. |
| | 1935 | Ohio Laws of 1935, Senate bill No. 10. | Prior to Mar. 1, 1935, ⅔ vote of board of commissioners may declare 1 percent not enough for county relief and welfare in 1935. Must submit it to voters for majority vote. |
| | 1935 | General Code, sec. 5625-18. | Simple majority of votes necessary to increase school assessments; 65 percent needed for all other purposes. |

[3] The Smith 1 percent law (1.5 percent under certain conditions) was enacted in 1910.

TABLE 14.—*Over-all limits on property taxes*—Continued

| State | Date | Citation | Rate of limitation |
|---|---|---|---|
| Oklahoma | 1933 | Constitution, art. X, sec. 9. | 1.5 percent over-all taxes. No State tax on property. Exempts bonded indebtedness. County excise board (until legislature provides otherwise) may make 2 mills additional increase for schools; then 10 mills more allowed by voters. |
| | 1933 | Laws (1933), ch. 122 | Limits set for counties, townships, cities, towns, and school districts, i. e. townships, 1½ mills total limit. |
| Washington | 1932 | Initiative Act No. 64, Laws of 1933, ch. 4. | 4 percent over-all limitation; 2.5 percent on rural property. (Assessed valuation is 50 percent.) Exempts prior debts. ⅔ vote required to increase levy: 0.5 percent for State; 1 percent for county; 1.5 percent for city; 1 percent for schools. |
| | 1934 | Initiative Act No. 94, Laws of 1935, ch. 2. Extended by Initiative Act No. 114, 1936. | 3.7 percent over-all limitation. (State limit cut to 0.2 percent and earmarked for higher education; 0.3 percent added for roads kept total to over all 4 percent.) Bonds issued subsequent to 1934 must be retired, within the limit. Extra levies for prior debts limited to 0.5 percent. |
| West Virginia | 1932 | Constitution, art. 10. sec. 1. | 0.5 percent limit on agricultural property. 1 percent on property used as residence by owner. 1.5 percent other rural property. 2 percent other urban property. Increase permitted up to 50 percent by ⅔ vote of taxing units, good for 3 years. |
| | 1934 | H. B. No. 234, second extra session, 1934. | (1) Maximums divided into 2 classes; 30 percent debt services, 70 percent operating expenses (divided 20:20:30 ratio for counties, municipalities, schools). (2) Maximum can be exceeded for debt services; cannot for current expenses. (3) Approved by State tax commission. |

The following table indicates the States which adopted over-all limits and the nature of those limits. In six of the nine States, the limits have been embedded in the State constitution.

These limits have brought in their wake curtailment of essential governmental services, increase of debt, and adoption of heavy general sales taxes.

The severest limits are found in Indiana, Michigan, Ohio, and West Virginia. Indiana, however, according to the director of the governmental research bureau of the Indiana Chamber of Commerce, has not experienced real tax limitation, because the "emergency" clause written into the 1933 law has been liberally interpreted. Here, the county tax adjustment boards, set up under the tax limitation law, may "allow" any rate beyond the tax limit that is needed when a municipal corporation is in a pinch.

Testimony from impartial students of government appears to be unanimous concerning the undesirable effects of these restrictions.

Dr. Robert S. Ford, writing in the December 1935 issue of the *National Municipal Review* has the following to say respecting conditions in Michigan:

The available information indicates that the limitation has worked a severe hardship on the cities in which it has been adopted. Budgets have been thrown out of balance, adoption of illusory economies has been forced upon city administrations, such as the inability to provide adequate street maintenance, while municipal financial conditions have been further aggravated by demands that the localities furnish a substantial portion of the costs of welfare relief. Furthermore, city school systems have been seriously crippled with the adoption of an over-all tax limitation. * * *

All of the nine cities are now following drastic policies of retrenchment. The heaviest burden has fallen on the schools and city government. The schools have been forced to shorten the school year, cut teachers' salaries, as well as reduce the teaching staffs. City services have also been greatly reduced. The type of economics adopted has included items such as the closing of fire stations and reduction in the number of firemen, reduction in the number of policemen, elimination of street maintenance, reduction of street cleaning and sewage and garbage disposal, closing of city parks and reduction of recreational facilities. The advisability of charging fees for the use of city recreational facilities, garbage collection, and other services has been considered.

From Dr. Frederick L. Bird, director of municipal research, Dun and Bradstreet, Inc., we get the following comment:

* * * the method used is haphazard, misdirected, and arbitrary, and there is more than a suspicion that it is merely a self-interested and short-sighted attempt to shift the tax load regardless of consequences. The tax rate limit scheme is an immediate threat to good government, and its adoption holds forth promise of increased rather than decreased cost of municipal administration.

Ohio, now entering blithely upon another 1-percent tax limitation experiment, has but to look to its previous adventure in this field to discover its practical futility. Municipal credit, it may be repeated, depends upon keeping debt well within available resources to pay and upon balanced budgets. From 1912 to 1922, the period in which Ohio previously was demonstrating tax saving under a 1-percent limitation, taxes of Ohio counties and municipalities increased 96 percent, this despite the fact that huge sums were being deferred, through bond issues, for payment by taxpayers in later years. The effect of this bemuddled era on debt is likewise a damaging testimonial. Inadequate revenues forced municipalities to issue bonds to finance operating deficiencies, pay-as-you-go plans of capital financing were abandoned, and the many minor improvements and replacements normally and properly paid from tax revenues were financed by borrowing.[23]

Howard P. Jones, editor of the *National Municipal Review*, discussing, "Is Over-all Tax Limitation Sound Fiscal Policy?" in *The American City*, October 1936, writes:

Generally speaking, local government during the depression has tightened its belt to the last notch. Further substantial curtailment of local governmental services may be regarded as impossible except in isolated instances. This is not to say that these services cannot be rendered at lower cost through intelligent reorganization of local units. It is to say that, barring reorganization, there seems no way further to reduce the cost of local government. This being true, tax limitation, where it means the establishment of a rate substantially below the present rate, must be followed by (1) further sacrifice of services, (2) reorganization of local government to render the same services at less cost, (3) the location of new sources of revenue to replace those lost through the property tax and/or (4) the postponement of current obligations. Number 2 is, of course, the desirable solution to the problem. Unfortunately, it is the most difficult of the four to get adopted. In the search for new sources of revenue, citizens might well give serious consideration to whether the replacement tax may not force them to pay more than they did before. For, however poor a measure of ability to pay real property may be in these days of intangible wealth, it is still one of the best we have.

These are realities which must be faced by voters in states where tax limitation will be an issue this fall. There are others for which space is lacking here. One that should be mentioned before closing, however, is that tax limitation endeavors to place all communities in the same mold. Regardless of local needs or desires, the tax rate of each parcel of property must be the same.

Tax limitation for the average taxpayer is a delusion and a snare. It is a self-shackling, with none of the anticipated benefits realized. Loss of governmental services and mounting debt soon bring the citizen to a realization of the mistaken pathway he has chosen. Those states at the crossroads which are to vote on tax limitation in November may well pause to consider the experience of predecessors such as Ohio, the unfortunate guinea pigs in an unsound taxation experiment.

Perhaps the most dramatic results have been apparent in West Virginia. Four years after the enactment of the 1932 law, Hume K. Nowlan, executive secretary of the West Virginia League of Municipalities, declared in the *News Bulletin* of the league (May 27, 1936):[23a]

The people are no longer deluded. They know that the only real "limit" their vote effected was at the expense of municipal services. They have experienced the discontinuance of police, fire, and health protection services. They have suffered from poorly lighted and unclean streets. They have been subjected to the indignity and danger of clogged sewers and accumulating refuse. They daily see the valuable capital improvements for which they paid (pavements, sewers, bridges, buildings, and parks) become obsolete and unserviceable through disrepair. They know all this is due to lack of operating funds.

**Sales Tax Provisions in Tax-Limit States**

It is interesting to see that, with one exception, every one of the States that has adopted over-all limits has

[23] The Effect of Tax Rate Limits on Municipal Credit," by Frederick L. Bird, in the *National Municipal Review*, November 1935.

[23a] For more recent discussion of the effects of tax-limit laws, see, "Tax Limitation—A Dangerous Device," James W. Martin, *National Municipal Review*, September 1939, pp. 619–625; and *Property Taxation*, the Tax Policy League, April 1940.

subsequently or at the same time enacted heavy general sales taxes. The single exception is Nevada, where the over-all limit was not ratified until November 1936.

Following are the sales tax provisions in the tax-limit States:

TABLE 15.—*Sales taxes in tax-limit States as of June 1937*

| States | Type of tax | Rate of tax |
|---|---|---|
| Illinois | Retail sales | 3 percent. |
| Indiana | Gross income | ¼ percent wholesalers, jobbers, manufacturers, extractors, farmers; 1 percent retailers, utilities, financial institutions, all other businesses and professions. |
| Michigan | Retail sales | 3 percent. |
| New Mexico | Gross receipts | ⅛ percent wholesalers; ¼ percent manufacturers; 1 percent contractors; 2 percent retailers; ¼–2 percent extractive industries; 2 percent professional, personal, and utilities services. |
| Ohio | Retail sales | 3 percent. |
| Oklahoma | Gross receipts | 2 percent. |
| Washington | Retail sales | 2 percent. |
| | Gross receipts | ¼ percent extractors, manufacturers, wholesalers; retailers, ½–3 percent public utilities; ½ percent all other businesses not specifically exempted. |
| West Virginia | Retail sales | 2 percent. |
| | Gross income [1] | ½ percent retailers, banks, amusements; 3/20 percent wholesalers; 3/10 percent manufacturers; 2 percent contractors; 1 percent income from real and personal property; 1–4 percent public utilities; 1–6 percent production of natural resources, 1 percent gross income of all others not subject to personal net income tax. |

[1] Certain of these categories subject also to a surtax equivalent to 30 percent of gross income tax.

A 2-percent tax on retail sales constitutes a much heavier burden on the small home owner than the amount of the real-estate tax which would be displaced thereby. It was found in a recent study by the Tax Policy League [24] that if a 2-percent retail sales tax were used to offset an equivalent amount of revenue from the real-estate tax, a taxpayer with a $1,000 annual income and owning a home assessed at $2,000 would pay twice as much on the sales tax as he would save on his real-estate tax.

If his annual income were $10,000 and his real estate worth $25,000, his property tax savings would be roughly equivalent to the burden of the sales tax. As his income and property values progressed beyond this point, however, he would be greatly benefited by the imposition of a sales tax in lieu of part of the real-estate tax.

The following resolution concerning tax limits was adopted by the American Municipal Association on October 17, 1936:

*Resolved*, That the American Municipal Association condemns in strongest terms the principle, purposes, and the results of over-all tax limitations imposed on local governments through the machinery of State governments. The chief proponents of tax limitations are not genuinely concerned with tax reduction. Their admitted purpose is to reduce governmental revenues below minimum requirements in order to force a shifting of the tax load, which in general has resulted in new consumer taxes.

The American Municipal Association believes the direct responsibility of local governments to the people should be maintained and that the people of each local government should continue to exercise their control over the personnel, policy, services, and expenditures of that local government. Only by a full assumption of the responsibilities of local self-government can the citizen become proficient in self-government.

No better evidence of the indifference of the proponents of over-all tax limitations to efficient governmental administration and the interests of the people as a whole need be found than the present situation in the State of Michigan where after a drastic tax limitation had been adopted the proponents now have forced to a vote a proposal to abolish all taxes on property in that State.

## Land Value Taxation

The gradual disintegrating process which has been taking place in connection with the general property tax provokes the thought that the tax will probably eventually fall only upon realty and may very possibly be reduced into one on land alone.

Such a development, if it takes place, will no doubt come about as a continuation of the present gradual trends rather than as a sudden overthrow of the present system. The changes that have already taken place or that are now in process have been forced, step by step, by the realization of the unworkability and inequity of the current methods. Personal property has been forced out of the tax picture in one or two States and is being gradually displaced elsewhere. The same process, though with considerable lag, appears to be taking place with respect to the taxation of improvements.

### Differing Incidence of Land and Improvement Taxes

The differing incidence of the tax upon land and improvements appears to be very little grasped by the layman, although it is a subject concerning which economists have been in substantial agreement for a long period. The tax upon improvements tends to be shifted to the consumer; the tax upon land ordinarily is not shifted but falls upon the landowner. The nonshiftability of the land tax is due to the process of capitalization. This has been described by a number of economists. The following quotations are typical of the general sentiment. This principle has been clearly stated by Prof. Charles J. Bullock of Harvard University in his *Selected Readings in Public Finance*.

The heavier burden which falls upon real estate is greatly alleviated by the fact that, whenever real property changes hands, existing taxes are capitalized, so that the purchaser buys upon what is practically a tax-exempt basis. Every buyer of real estate, at the time of his purchase, takes into

[24] *The Home Owner and the Sales Tax*, pamphlet, April 1935.

account the taxes falling upon the property, and adjusts accordingly the price he offers. The result is that, at any time, the value of real estate is diminished by the existing taxes capitalized at the current rate of interest, so that these taxes are no real burden for the subsequent purchaser. If the taxes increase during the time he holds the property, the additional burden of course falls upon him, since it diminishes by so much the price obtainable at the next transfer. In this manner from generation to generation the burden of real-estate taxation is diffused among successive owners, each of whom bears only such increases in the tax rate as occur during his period of tenure.[25]

This point of view is also set forth in the following statement by Prof. Edwin R. A. Seligman of Columbia University and Jesse Isidor Straus in the 1932 *Report of the New York State Commission for the Revision of the Tax Laws:*

Considering specific groups of property owners, it has been argued that heavy real-estate taxes discourage home ownership. This overlooks the fact that a heavy tax on land, by keeping its capital value low, makes it more accessible of purchase by those of small means. * * * Were taxes lowered, land values would rise, and many prospective home owners would be discouraged from purchasing because of the large initial sums involved.[26]

Prof. Harley L. Lutz compares the incidence of taxes on land and buildings as follows:

It is necessary to separate this tax into two parts, one of which is the tax levied on the land, and the other is the part levied on the building. This separation is required on account of the difference in the incidence of the two taxes. For administrative reasons buildings and land are usually assessed separately under the property tax.

First, who bears that part of the tax which is imposed on the land? The general tendency is for this tax to fall on the owner of the land. If the land is leased, the owner would willingly enough pass the tax along to the tenant by exacting a higher rent. But on the assumption that the latter is already paying the full economic rent of the land, the fact that there are taxes to be borne does not enable him to pay more rent. The conditions which determine the rental value of a piece of land are determined entirely independently of the taxes which may be imposed. * * *

As between the present owner and the future purchaser of a piece of land there is a tendency for the existing taxes to be borne by the former, through the process of capitalization or absorption of the tax in the lower capital value which the land will command. * * *

A different situation is presented by the tax on buildings. A building is a form of durable capital investment, and the taxes on this investment tend to be borne by the occupier or user of the structure. If the owner is also the occupier, there is clearly no alternative but for him to bear the tax unless he is engaged in some business that will afford him opportunity for shifting. If the building is occupied by tenants, the long-run tendency will be for the tax to fall on them, on the principle that the supply of buildings will be so regulated by the flow of capital into this form of wealth that the normal clear return will be realized. If the taxes are levied on the owner, and conditions are such that shifting to the tenants is impossible, the immediate result is to reduce the return on this form of investment below the normal or necessary yield. A diversion of funds ensues, the supply of buildings declines, and house rentals must eventually advance sufficiently to restore the net income to its necessary or expected level.

All of this is, however, a slow process which will work itself out only over a long period of time. Capital invested in buildings cannot be immediately transferred. Once it has been tied up in this permanent form the owner's return must be governed by the state of demand and supply. The temporary intermediate incidence of the tax on buildings will depend, therefore, on the current relation between the demand for buildings and the supply of them.[27]

The distinction between a tax on buildings and a tax on land is also emphasized by Prof. Jens P. Jensen:

The principles governing the shifting of taxes on land are, however, different from those governing the shifting of taxes on improvements, while the latter resemble or are identical with those that determine the incidence on producers' capital; hence it is more logical to treat the tax on improvements separately. It is true that some difficulty is involved in distinguishing satisfactorily between land and improvements, much more than in distinguishing between improvements and producers' goods. But probably the reason is largely that the distinction between land and improvements is material, since the governing principles are different; while the distinction between improvements and producers' capital is, at any rate, less important, since the governing principles are similar if not identical. For improvements, like producers' capital, are reproducible goods, while, with certain minor exceptions, land is not. * * *

The peculiar position of land arises from the fact that it is nonreproducible and hence has no cost of production. The value of land is the capitalized net income, the economic rent. * * * There can be no reduction in the supply of land, and, as demand is unaffected, no change in the amount or the price of the products of land, and hence no shifting of the tax. The tax simply reduces pro tanto the net return to the owner, or absorbs a part of the rent.[28]

Numerous other tax authorities could be cited in similar fashion. The quotations given present the consensus among economists concerning the shifting of taxes on land and buildings and the capitalization of that part of the tax falling upon land.

For taxing purposes, it is evident that buildings are more similar in two ways to personal property than to land—first, in difficulties of assessment and second, in relation to the shifting and final incidence of the tax.

Out of the latter grows the important social consideration that taxes on improvements discourage building by reducing profits thereon, whereas taxes on land stimulate building by decreasing the price of the land, so that it becomes easier to acquire, and also by penalizing the holder of vacant land.

This difference in incidence justifies a difference in tax treatment of the two elements of real estate—land

[25] Charles J. Bullock, *Selected Readings in Public Finance*, 3rd ed., p. 404.

[26] P. 47.

[27] Harley L. Lutz, *Public Finance*, revised 1936, p. 394, 395, 396 397.

[28] Jens P. Jensen, *Property Taxation in the United States*, 1931, pp. 60, 61–62.

and improvements. If the real-estate tax were reduced to one on land alone and if any elements of taxpaying ability represented by income-producing improvements were reached through an income tax, the problem of tax administration would be greatly simplified. Building would be doubly encouraged, as the tax on land would keep land values down and make land easier to acquire, and the untaxing of improvements would also make building less difficult. Speculation in land values would be discouraged. Such a method would be a much more equitable way of granting relief to home owners than the present homestead exemption measures. Both home owners and rent payers would benefit thereby. The problem of tax exemption for religious, educational, and charitable institutions would largely disappear. Most of the property held by such institutions is represented by improvements and personal property, and these would be exempt. It would be proper that such organizations pay a land tax as a governmental service charge. If they were holding large areas of land for speculative purposes, they should also be taxed similarly to other landowners.

**Capital Value vs. Income Basis for Real Estate Taxes**

There has been much agitation in this country during recent years for a change in the basis of real-estate taxation from capital value to income. Such a change would be highly undesirable with respect to the taxation of land. In the opinion of some, however, it could be made appropriately with respect to the tax on improvements, while retaining the capital value basis for land. Such an arrangement has been suggested by Peter Grimm, a prominent realtor of New York City. In an address before the Institute of Public Affairs at the University of Virginia, July 10, 1935, Mr. Grimm said:

> I would suggest a fundamental change in the basis of real-estate taxation, at least insofar as urban real estate is concerned. I have said above that taxes on land and buildings are levied on capital value. My proposal is to continue the levy on land as at present, but to base the levy on buildings on earnings or imputed earnings. In this way land held for speculative purposes could be forced to pay its fair share of the cost of government, while the burdens on improved lands would fluctuate in part with the abilities of their owners to pay.

Such a proposal is believed by some to be a practical intermediate step which represents some concession to the realtors who are clamoring for an income basis of property assessment and also to the advocates of the untaxing of improvements coupled with a wider use of the taxation of income from all sources.

There are four major alternatives respecting the real-estate tax. There may be a tax, as at present, on the capital value of both land and improvements. There may be a tax, as proposed by many realtors, on the income value of both land and improvements. Land may be taxed on its capital value and improvements on their income value, as suggested by Mr. Grimm. Land may be taxed on its capital value and improvements may be entirely or partially exempted, as advocated by a number of tax reformers.

In any case, there should be a State-collected, locally shared tax on net incomes—both personal and corporate. The personal income tax should be graduated. If such a tax is in force and if land is taxed on capital value, it is a debatable question whether there should be in addition a special income tax on improvements. Such a special income tax might make the transition to a land-value tax much easier. It would prevent a falling off of revenues, and it would silence the opposition of those who are strongly opposed to the untaxing of improvements. The double taxing of the income from improvements—once under the regular income tax and once under the special income tax on improvements—would not be as burdensome to owners of improvements as the present system, inasmuch as the second tax would be in lieu of the present levy based on the capital value of improvements and would be more easily borne. The special income tax on improvements could and probably would be eventually decreased or eliminated.

It would seem that the transition from the present real-estate tax to one of land value taxation could be made much more readily and easily by way of a special income tax on improvements as described than by a sudden complete shift or even by the more gradual process of the so-called graded tax plan alone.

**The Graded Tax**

The graded tax is a levy at different rates on land and improvements. The most outstanding example of differential treatment in this country is in Pittsburgh where land is taxed for city purposes at a rate twice as high as that on improvements. Pittsburgh is not a very good laboratory for determining the value of the graded tax proposal, however. In the first place, the rate applies only to city taxes and not to county and school district taxes. The differential rate, therefore, applies to approximately one-third of the total real-estate tax levied in the city. Moreover, there is no income tax in the State of Pennsylvania, so that large corporations and owners of income-producing real estate go largely untaxed.[29]

Opinions differ concerning the effects of the graded tax in Pittsburgh. It is claimed on the one hand that the tax has stimulated building and has decreased

[29] Personal and corporate income taxes were adopted in Pennsylvania in 1935. The personal tax was declared unconstitutional, however.

the burden on home owners.[30] On the other hand, it is said that the—

> very large volume of building construction in the city of Pittsburgh during the post-war period cannot be attributed to the graded tax law and that the city had no advantage over other cities.

and that—

> rents in Pittsburgh in recent years have been higher than in any other city.[31]

Pittsburgh's chief assessor, P. R. Williams, writes under date of February 20, 1934:

> The success of Pittsburgh's graded tax plan is generally recognized, and after 20 years of actual experience no one seriously proposes a return to the old system which prevailed prior to the Act of 1913. The present graded tax law has been endorsed and defended by the Allied Boards of Trade of Allegheny County, the Pittsburgh Chamber of Commerce, Pittsburgh Civic Commission, Pittsburgh Real Estate Board, Civic Club of Allegheny County and by various labor unions. A majority of the members of the city council are on record in favor of extending the present graded tax system and there is substantial evidence of a growing public sentiment in this direction and a strong probability of some important advance during the next year.[32]

The following conclusion with respect to the graded tax was reached by J. P. Watson in a recent study.[33]

> In short, it appears that conditions in the transitional period[34] were such as to result in (*a*) a sharply rising total value of rental property; (*b*) retardation of the rise in land value, and therefore, (*c*) a premium valuation of buildings. * * *
>
> If it is true, as it appears to be, that part of the rise in building valuation, absolutely and in relation to land value, was directly an effect of the change in the tax system, then much of the real estate has been recapitalized. To whatever extent recapitalization has occurred, the graded tax has ceased to be a net differential on present owners.

### Land Value Taxation in the United States and Abroad

In addition to the Pittsburgh experiment, a similar method of taxation is in use in Scranton, Pa., and land value taxation is in force in varying degrees in numerous municipalities of Western Canada, Australia, New Zealand, South Africa, and other countries.[35]

In a recent survey[36] of tax opinion among professors of public finance, it was found that most of the respondents were opposed to complete untaxing of improvements, but that a majority favored taxing improvements at a lower rate than land.

### An Increment Tax on Land Values

For many years, economists have tended to favor an increment tax on land values. Such a tax has been experimented with in foreign countries.

The system of taxation in Great Britain has so unduly favored the owners of unimproved land that protests and proposals for reform have been numerous and frequent. In 1909, several new land taxes were adopted, among them an increment-value duty. The English levy is described as follows by Prof. E. R. A. Seligman:

> In the second place, we come to what is perhaps the most interesting part of the entire scheme, the increment-value duty. This tax is payable when land changes hands under certain conditions; that is, it is levied on the following occasions: (1) The sale of any land or interest therein; (2) its lease for a period of more than 14 years; (3) its passing to a new owner by reason of death; (4) in the case of land which is held by any body, corporate or incorporate, and which therefore does not change hands, the tax is levied every 15 years, with the privilege on the part of the owner of paying in 15 yearly instalments. On each of these four occasions the site value of the land is determined, and the excess, if any, of the site value thus ascertained (commonly called the occasion site value) over the original site value constitutes the increment value. An increment value of 10 percent is not taxable; but on the excess of all increments of value over 10 percent a tax is imposed at the rate of 20 percent. In other words, the tax amounts to a fifth of any periodical increase in value over 10 percent. "The original site value" is the site value as of April 30, 1909; and on each successive "occasion," when the site value is compared with its original value, credit is to be allowed for the duty paid on previous occasions. The balance, called the "duty unsatisfied," is therefore really a tax on the entire increment since the last settlement. In case of a fee simple of land, the calculation is easy; but where the interest is less than the fee simple, the duty collectible is proportionately reduced, the balance ultimately going to the exchequer as occasions which affect the other interests in the land may arise.[37]

The provisions of this law met with such determined opposition, however, that the law was repealed in 1920. The cost of valuation exceeded the revenue during the first 4 years. This was followed by a period of disorganization resulting from the World War.

Experiments with increment-value taxation in Germany proved somewhat more fruitful. An imperial tax on the unearned increment of land value was adopted in 1911. Such taxes had previously been levied in some of the German municipalities. The increment tax was adopted by Frankfort in 1904, by Cologne and Gelsenkirchen in 1905, and by Dortmund and Essen in 1906. The tax was in use in about 4,500 cities and towns, in-

---

[30] Thomas C. McMahon, Pittsburgh's Graded Tax on Buildings. *Proceedings of National Tax Association*, 1929, pp. 133–140.

[31] Edward F. Daume, A Critical Analysis of the Operation of the Pittsburgh Graded Tax Law. *The Annals of the American Academy of Political and Social Science*, March 1930, pp. 145–156.

[32] Ibid.

[33] J. P. Watson, *The City Real Estate Tax in Pittsburgh*, Bureau of Business Research, University of Pittsburgh, 1934, p. 32.

[34] The change in the tax was effected gradually over a period of years.

[35] See Progress Toward Land-Value Taxation Throughout the World, by Bolton Hall, in *The American City*, August 1936. The article is based upon data in the information bureau of the United Committee for the Taxation of Land Values, as compiled by A. W. Madsden, of London, and from data supplied by Joseph Dana Miller, editor of *Land and Freedom*, New York City.

[36] *Tax Opinion Survey*, Tax Policy League, mimeographed bulletin, May 1936.

[37] *Essays in Taxation*, p. 491.

cluding about one-fourth of the entire German Empire, in 1910. A State increment value tax was established in Lippe-Detmold in 1910. The rates in the German cities were generally progressive, but maxima and minima varied greatly. In Hamburg, the rates were graduated from 1 to 12½ percent and in Cologne, from 10 percent to 25 percent. In Gelsenkirchen, the maximum was 30 percent. These separate State and municipal taxes were abolished with the adoption of the imperial tax.

The law provided that a tax should be levied at the time of transfer on the increase of value which had occurred without the activity of the owner. Instead of being imposed only on land, as in England, the tax was levied on real estate. Improved property of less than 20,000 marks in value and vacant land of less than 5,000 marks were exempted. The tax was graduated from 10 percent of the increment, where the increment amounted to 10 percent or less, up to 30 percent on all increments of 290 percent. A diminution of 1 percent was permitted for every year since the last sale.

The tax was assessed by State officials under the general supervision of imperial officials. Fifty percent of the proceeds went to the Imperial Government; 40 percent to the locality, and 10 percent to the State to cover cost of collection. The localities were permitted to levy additions to the tax, except that they could not impose more than double their own share, and the total tax could not exceed 30 percent of the increment value.

Prof. E. R. A. Seligman commented as follows upon the tax at the time of its passage:

> With all its defects, however, the law is a striking example of progress in the conception of fiscal justice, and in evidence of the influence of modern changes in economic conditions on the forms of taxation.[38]

The land-increment tax was converted into a general property-increment tax in 1913, and the proceeds of the land-increment taxes reverted to the States and localities. The principle of the property increment taxes was again accepted in the war taxes of 1916, 1918, and 1919.

In announcing the National Socialist plan for taxation reforms to be instituted in 1934, Fritz Reinhardt, Secretary of State in the Reichsministry, said in June 1934:

> In the case of the increment-value tax will have to be brought about a simplification of the law and administration in the first place. In its present form that tax no longer seems to fit in with our modern era. It is apt to encumber the real-estate market and is, moreover, in many cases out of proportion to the work of administration required.[39]

The increment tax was abolished in 1934. New buildings had previously been exempted from the land and building taxes. A land-acquisition tax was adopted by Germany in 1934.

An unearned-increment tax was advocated for New York City by the commission on new sources of city revenue in 1913. The commission proposed to assess and tax annually all increment accruing in the future in the same manner that existing site values were assessed and taxed. The rate of tax suggested was 1 percent.

The British increment tax was never really given an adequate trial, and there does not seem to be in existence any comprehensive evaluation of the German taxes. In both countries, the initiation of the laws was complicated by the World War, and the post-war depression was probably largely responsible for the loss of interest in such taxes. A 2 percent increment tax has been recently enacted in Denmark. Attempts to enact increment tax laws in this country have proved abortive.

It cannot be fairly concluded that the lack of conspicuous success with such legislation disqualifies the contention of economists concerning its desirability. We underwent a century of sporadic experimentation with net income taxes before there was reasonably satisfactory adaptation of the principle. It may be many years before we work out a satisfactory means of adapting the principle of increment taxation to practical administration.

Certainly, however, it seems to offer a much more equitable and administratively practical method of taxation than the special assessment. The special assessment is a tax upon property on the basis of an estimated gain before such gain has been realized. Experience has proved that estimates may be far from accurate. By means of the special assessment, the Government can never collect more than the total cost of a particular improvement, even though the actual increase in property values may be many times that amount. In other cases, the property may be assessed for more than the resulting gain accruing to it from the development.

The increment tax, on the other hand, is based on an actual rather than an estimated increase. The taxpayer is not penalized by having to pay more than the resulting increase in value, as may happen under the present plan, and the Government is not limited to receiving back only the cost of the improvement, in cases where a very much greater increase of value results. Under this plan, the Government may, moreover, recoup some of the increases in property values resulting from public expenditures other than public improvements.

The present system of special assessments has been generally upheld by the courts, and it is the opinion

[38] *Essays in Taxation*, p. 515.

[39] *News in Brief*, published by the Deutscher Akademischer Austauschdienst, July 1934.

of high legal authorities that a moderate increment tax would be similarly upheld.

One of the controversial questions with respect to the tax is whether it should be levied periodically or at the time of transfer. The latter practice was adopted in England and Germany and the former recommended in New York City.

The transfer tax appears much more equitable, as it would fall upon the taxpayer only when he had actually realized an increase of value and would not penalize him for boom-year paper profits which never materialized into cash. Even if the tax were as high as 10 percent or 25 percent, if levied at the time of transfer, he would still have left 90 percent or 75 percent of his gains.

Some adjustment for interest should be made in the case of infrequent transfers. Credit should be allowed the taxpayer for any money spent by him in developing the property or in special assessment payments.

If the tax were levied annually, it would prove onerous to the landowner even when imposed at a low rate. Home owners would find the tax very burdensome in boom years when assessed values went up but there was no current realization of value through sale. Prospective home owners would be unable to forecast annual expenditures with accuracy, as they would be unable to tell what the annual increment tax would amount to. The annual increment tax would partake of many of the disadvantages of the special assessment. Where the assessment is based on anticipated profits, the annual increment tax would be based on paper profits. In contrast, the transfer tax would fall upon the taxpayer at the moment his profits were realized and when he actually had cash in hand for payment. The Government would find the transfer tax much more productive, as there would be no occasion for the delinquency which would accompany the other two methods, and the rates could be placed much higher than in the case of the annual tax. It would also be much simpler to administer and would tend to mitigate the severity of speculative booms in real estate.

### American and Foreign Methods of Taxing Real Estate

Such a variety of practices with respect to the taxation of real estate are followed throughout the world that any clear description of them, however concise, would be beyond the bounds of this report.

A mere enumeration of the types of taxes with some discussion of one of the chief points of difference between American and European methods is all that is possible here. In a table compiled by Dr. William Withers for the 1935 edition of *Tax Systems of the World*, the following taxes on land and improvements were enumerated as being levied by national governments:

*Belgium.*—Annual 7-percent land tax based on income or assumed income measured by normal rental value and sales of land.

*Brazil.*—One-percent land tax paid annually or semi-annually. Based on declaration of occupant as to salable value of bare land. Proved by means of documents or comparison with other land values in the locality.

*Canada.*—Land not taxed directly but income from land is taxed by the National Government. Provincial governments levy in various ways upon value of real property.

*Denmark.*—Semiannual State real-estate tax measured by assessed value of property. One and five-tenths per mill of ground value and 1.1 per mill of total value of property less ground value and Kr. 10,000. Also 2-percent tax on unearned increment on urban real property. Payable semiannually. Municipal real-estate taxes in addition.

*Estonia.*—Annual net profit tax on real estate. Land: 19 cents per unit of estimated net profit; 45 cents per hectare of unvalued land. Buildings: 1.4 percent of estimated net profit or 3 cents per unit of estimated net profit. Industrial structures: 6 cents per unit of estimated net profit or 0.5 cent per unit of estimated value.

*France.*—Annual 12 percent tax on land rents or profits. In land built upon, tax is based upon registered net income equal to rental value of buildings plus surrounding terrain; in land not built upon, based upon registered net income of all property in land. Additional local taxes.

*Germany.*—Land acquisition tax on transfer of all land property situated in Germany. National tax 3 percent, plus 2 percent local tax. An additional 2 percent in case of land speculation. Annual general property tax based on real and personal property. From three-tenths of 1 percent to seven-tenths of 1 percent, graduated according to amount or class of property.

*Great Britain.*—Annual land tax measured by annual rental value. Proportions of parochial quotas by assessments. Income from land is also reached through the national income tax.

*Hungary.*—Land tax on agriculturally utilizable land payable quarterly. Federal tax is 20 percent of net cadastral yield. Local authorities permitted to levy additional taxes.

*Italy.*—An annual 10 percent land tax based on income from land accruing to proprietor exclusive of revenue derived from operation. Measured by assessed value, based on revenue derived from land during period 1903–13. Additional taxes by communes and provinces. Annual tax of 2 lire per hectare on improved lands which have been exempted from taxation 20 years and up to the time the new cadastral estimates were made. Also taxes on lands reserved for hunting and on agricultural incomes.

*Japan.*—Semiannual land tax. Three and eight-tenths percent of rental value.

*Netherlands.*—Annual land tax based on rental value, less debts relating to property. Six percent for open land; 4.86 percent for land built upon. Also annual property based on value of property less debts relating thereto. Additional rates by provinces.

*Poland.*—Semiannual land tax measured by income resulting from agricultural production. Taxes established under fiscal laws of different administrative districts.

*Roumania.*—Annual tax on income from agricultural land. Also annual tax on net income from real estate.

*United States.*—Income from land taxed through national and State income taxes. Direct taxes based on capital value levied by State and local governments.

It may be observed from the above that Brazil, Canada, Denmark, Germany, the Netherlands, and the United States are the only countries among those enumerated in which the real-estate tax appears to be measured by capital value. It may also be observed that methods of taxing land upon an income basis vary markedly in the different countries and, in many instances, appear to be extremely complicated.

**Real Estate Taxation on Income or Annual Use Value Basis**

The rather general European practice of basing the tax upon income rather than capital has caused widespread advocacy of such a method in this country.

The National Association of Real Estate Boards sets forth the following as one of the major planks in its national tax platform: [40]

We propose that in valuing property for tax purposes, the income or annual use value of a property should be one of the major factors in the valuation, and that the tax laws of the various States be amended accordingly.

Numerous articles praising the English system and advocating its adoption in this country have appeared in the press during recent years. Careful study of the English system by unbiased students of taxation indicates, however, that the English system is much less desirable than the system now employed in this country.

Rosina K. Mohaupt and Alger W. Lenz [41] discuss the three different methods of assessment used in the English system and come to the following conclusions with respect to adopting the English system in this country:

The assessing procedure is so involved that it would be quite impossible to assess at other than 5-year periods. * * * It is a more costly method of assessment, requiring a larger force of assessing officers to investigate corporate records, and a more extensive investigation as to operating records and profits. The natural result would be higher costs of assessing than at present. Because of the complexity of the methods of assessing on income, the assessing official is allowed wide discretion as to the proper method to be used. * * * The method of computing the tax is involved, lacks the simplicity of the capital value method as used in Detroit, and makes a self-audit by the individual taxpayer difficult. In at least one method of assessing on income—the profits method—it would be necessary to employ a professional appraiser who would have the right to thoroughly investigate the accounting records of the properties assessed as in the case of public utilities in rate determination.

Furthermore,

exemption of vacant property produces social consequences which have been insufficiently studied as yet. The English system has not received unqualified endorsement of students of assessing procedure—rather it is thought to produce slum areas, crowded conditions, force the government into large housing projects, and place a higher burden on the individual taxpayer [by allowing the owner of needed land to keep it for an undesirably less intensive use].

Somewhat similar views have been expressed by Dr. Ernest S. Griffith, dean of the graduate school of the American University: [42]

Basically, there are two grave and insurmountable defects in "income" as a basis of assessment. First, it puts a premium upon holding land idle and upon retention of obsolete buildings. Secondly, it is in its higher ranges in reality a peculiarly pernicious tax on room space. These two factors operating together constitute a formidable obstacle in these days of high taxes to any new building at all, and operate continuously as factors checking expenditure for improvements.

By contrast, the American plan (at least as regards land) forces improvement or sale; and similarly acts as a lever against retention of obsolete buildings upon the more valuable land. The net result, except during the depths of a depression, is a continuous and vigorous increase in the real wealth of the Nation in terms of houses and other buildings. * * *

A tax rate based upon the *income* from real property thus aids in the perpetuation of the very poverty whose effects a large part of the tax receipts were themselves designed to mitigate. On the other hand, a tax rate based on *ownership* (particularly in the case of land) stimulates the creation of more wealth, and thereby itself tends to lessen this poverty. To tax locally in the United States on the basis of income rather than ownership would freeze the status quo, exaggerate the economics of scarcity, and force entire reliance upon governmental action and subsidy for 85 percent of our house building.

How then have British cities none the less succeeded, as they undoubtedly have succeeded, in greatly expanding their municipal social services, if their system of local revenue is really so inelastic? The answer is simple—through central subsidies. * * *

Undoubtedly powerful vested interests are working in the direction of a shift from the property to the income base, yet its enactment would create a grave danger of producing a kind of strangulation of our potential national development. Certainly those who look toward such a change as a way to provide a more elastic and liberal source of local revenue have not the least justification in England or elsewhere for any such hope. On the contrary, no other single step would so force central subsidy and bureaucratic control upon our cities. Such subsidies would be the only way left to provide our citizens with many of the amenities of life upon which they now insist.

John A. Zangerle, auditor of Cuyahoga County and a distinguished authority on assessment problems, likewise disapproves the English system:

The very property now most insistent on a change of assessment procedure, viz, the most highly improved, would lose most under the English system, which is based not only

[40] *Six Proposals for Tax Action: A Program of Fair Legislation on Behalf of Homes, Farms, and Other Real Estate,* March 1933, p. 8.

[41] *A Description of the English System for the Taxation of Real Property on an Income Basis,* Social Science Research Council of Wayne University, Report No. 2, 1934.

[42] Address before Tax Policy League, December 26, 1935. Published in *Tax Policy,* February 1936.

on assessment of the rental of improved property, but also on exemption of agricultural, unimproved property, improved but unoccupied property, and in part manufacturing. In other words, vacant lands, poorly developed lands, factory lands, and unoccupied improved property are unburdened in whole or in part, resulting in highly developed lands being additionally burdened. Valuable land withheld from use contributes nothing on its value toward public expenditure. Other valuable sites occupied by obsolete and tumble-down buildings contribute little. * * *

Owners of highly improved property should understand that the exemption of land held out of use must add to the tax burden of their property. As between the two alternatives, viz, taxing improved property more and vacant property less, or taxing vacant lands more and improved lands less, all socially minded citizens will agree that the latter should prevail.[43]

The consensus among tax authorities appears to be clearly against the income basis of property assessment. It is interesting to find also that an experiment in this country which was given a long trial proved to be very unpopular. For 87 years (1830–1917), Delaware had a law permitting local school districts to levy a tax upon the "clear rental value of all real estate." Dean C. A. McCue of the University of Delaware, who was on the local school board which had jurisdiction over the assessment of property, declared:

The assessment on a rental basis caused very much more dissatisfaction than the assessment of the same properties on sale value. Equality of assessment was generally considered to be very much more nearly achieved on the sale value basis. When the law was finally repealed in 1917 there was a general sigh of relief. Real-estate owners were glad to get rid of it.[44]

[43] M. M. Daugherty, *Eighty-seven Years' Experience in Taxing Land on Its Annual Yield Basis,* bulletin of the National Tax Association.

[44] Assessing Real Estate on Its Income, *Municipal Finance,* February 1936, p. 14.

# PART III—SECTION 6

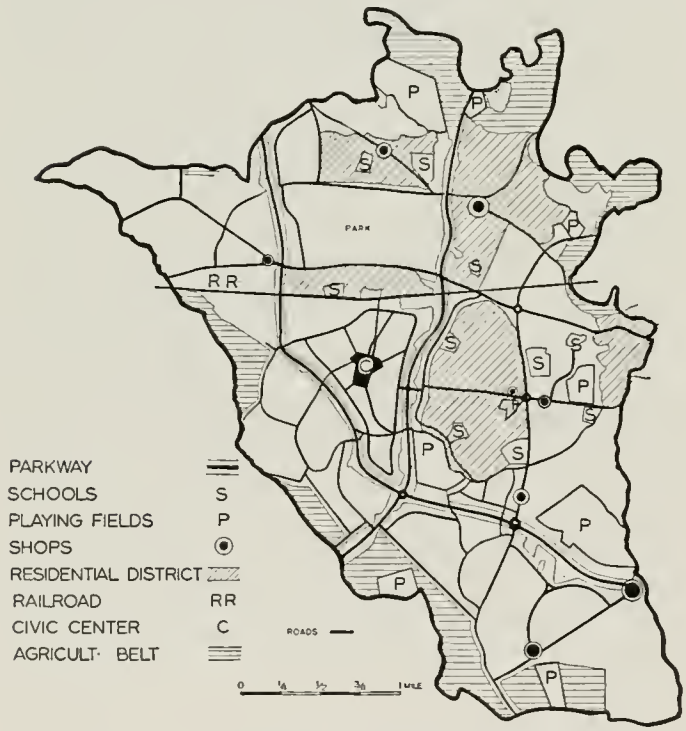
# DESIRABILITY, PRO AND CON, OF INCREASED PUBLIC OWNERSHIP OF URBAN LAND

### Public Ownership of Land for Housing Purposes

The relationship of the land problem to the betterment of housing and to urban welfare generally is becoming increasingly clear. The difficulties of land acquisition for large-scale projects as discussed in another section of this report, are a troublesome hurdle not only for Federal agencies engaged in housing construction but also for limited-dividend and other private-housing corporations. The instability of urben land uses, the intrusion of industry and business into residential sections, and the high cost of building sites resulting from speculative subdivision practice are problems faced not only by home owners and private investors but also by public agencies concerned with the housing problem.

### Municipal Land Ownership and Housing in Europe

Many European countries, including Denmark, Norway, Sweden, Finland, Great Britain, Holland, Germany, Austria, Poland, Czechoslovakia, Switzerland, Italy, France, and Spain have acquired and used public land for housing purposes as a means of solving some of these problems and of generally bettering housing conditions.




From *The Architectural Record* for June 1937

FIGURE 62.—Wythenshawe Estate, Manchester, England

How land is being utilized in this garden suburb development of the city of Manchester

A survey of the larger towns of Germany revealed that, in 92 out of 173 cities, lands supplied by the municipality amounted to approximately two-thirds of all new land used for home building in the decade following the war, and in certain localities, the proportion was as high as four-fifths. According to a report issued by the International Labour Office:

> Only part of this land was used for the construction of houses by the authorities themselves. In 70 towns of over 50,000 inhabitants, 45 percent of the land was placed at the disposal of public-utility societies (limited-dividend corporations) for the erection of dwellings, 32 percent at the disposal of private builders, and only 23 percent was used for the erection of municipal houses.[1]

In Great Britain, extensive areas have been purchased at sites for public housing schemes. Sir Ernest Simon, in discussing the relative success of the private garden cities of Letchworth and Welwyn and the city of Manchester's satellite garden town of Wythenshawe, says:

> The history of Wythenshawe shows that there are two further conditions which are vital to success. The first is that the city must own the land, or at least the major part of the land. The powers which the city possesses as local authority are limited to such powers as are expressly given by statute, and are totally inadequate to ensure satisfactory development. But the powers as landlord are limited only where actions are expressly prohibited by statute; the landlord can lease land subject to any conditions he likes to impose. It is the landlord power which is enabling Manchester to preserve the amenities of Wythenshawe in all kinds of ways which would not otherwise have been possible.[2]

In its Wythenshawe Ward, the city of Manchester owns 3,710 acres of land and is planning further purchases to round out its holdings. Up to December 1936, 6,190 houses had been constructed by the housing department of the city at a density of 12 to the acre. Preference is given to families from unhealthy surroundings and overcrowded conditions, several hundred of the tenants coming from condemned slum

[1] *Housing Policy in Europe,* International Labour Office, Geneva, 1930, p. 364.

[2] From the chapter on housing and civic planning in *A Century of Municipal Progress 1835–1935,* published under the auspices of the National Association of Local Government Officers of Great Britain.

areas. In all probability at least 90 percent are from densely populated districts of the city.[3] Rents per house vary, according to size and location, from about $2 to $4 a week, including electricity and rates (local taxes) but not including heat, which is supplied by coal stoves and fireplaces. A rent-rebate scheme applies to families from slum clearance districts, so that 25 percent of these families pay the same rent as in their old condemned houses. In addition to municipal housing, land is leased to private builders for erecting houses for higher-income groups. Up to October 1936, 952 of these had been built under suitable restrictions and careful supervision by the city architect.[4]

In Sweden, according to a report of the International Labour Office: "As most important municipalities possess very extensive reserves of land, they have been able to encourage the building of houses by a very effective policy.[5]

The experience of Stockholm is perhaps the most interesting in the light of American conditions. Stockholm compares in size and rate of growth with Buffalo or Milwaukee. At the beginning of the twentieth century, rural land suitable for building around Stockholm was largely in private hands. In order to prevent repetition of earlier undesirable private development, to control city growth, and to increase the supply of good, reasonably cheap dwellings by providing cheap building sites, the city since 1904 has been buying large rural holdings within a radius of 9 miles from the center. The municipality owns about 21,000 acres (over 32 square miles) now incorporated or about to be incorporated in the city area. This land area, acquired at a cost of between 6 and 7 million dollars, is about 5 times larger than the area of the city in 1904. Municipal garden cities have been laid out covering about 3,390 acres, which increased the improved area of the city about 75 percent. In order to promote early development, the first houses were built by the city, but since then private builders have carried out all building operations. There are now nearly 7,000 of these homes accommodating a population of about 42,500 chiefly moderately well-to-do families.

Since low-income families could not afford to live in the privately-built garden suburbs, the so-called small-cottage scheme was started in 1927. Approved families lease a plot from the city in one of the well-planned outlying suburbs for 60 years and build their houses themselves, except for work such as plumbing and electrical wiring, which they are incompetent or not allowed to do. The city supplies credit, plans, written instructions, partly prefabricated materials, and a limited amount of personal instruction in house building, all of which are paid for over a period, usually of 30 years. More than 2,000 of these small cottages had been built by the beginning of 1936, so that, together with the more expensive homes built in the city's garden suburbs, about 10 percent of the population of Stockholm is now housed on outlying municipal land. Very extensive reserves of land remain and will be laid out and equipped with streets and utilities when needed.[6]

The significant point about Stockholm's housing policy is that the garden cities and small-cottage schemes have been carried out for the most part without permanent subsidy. Sites have been leased usually at 5 percent of their capital value, so that ground rents will entirely accrue to the city. Significant savings in land costs to the house builder have thus been made.

### Advantages of Public Land Ownership for Housing

Municipal ownership of land for housing purposes, public, semipublic, cooperative, or private, offers a number of distinct advantages in city development which are frequently absent under private ownership.

Speculative subdivisions often promote scattered building development far removed from city utilities, entailing high costs for connecting sewers, water mains, and streets, and for providing schools. Uncontrolled private development may also result in square mile after square mile of dwellings packed cheek to jowl, with few parks, playgrounds, or even vacant lots available for recreation or breathing spaces. This too scattered or too congested housing development need not occur under municipal ownership of land. A city may select for building development only those areas of public land which can be most conveniently and economically utilized, both as sites in themselves and in relation to the present municipal utilities and facilities, including sewers, water, streets, schools, transit facilities, parks, and playgrounds. New sections may be developed as garden cities well located in relation to existing and proposed transportation facilities and to movements of industry, and surrounded by protecting greenbelts.

Frankfort-on-Main, Germany, offers a fine example of how effectively good city planning may be carried out because of large holdings of municipal land. The whole valley of the Nidda River which winds around two sides of the city was acquired. Low-lying bot-

[3] Unpublished letter to Harold S. Buttenheim from Leonard Heywood, housing director of the City of Manchester, December 7, 1936.

[4] "Wythenshawe Rehouses More Than 6,000 Families from Manchester's Insanitary Areas," in *The American City*, November 1936, p. 46.

[5] *Housing Policy in Europe*, International Labour Office, p. 128.

[6] Dahlberg, A.: "The Garden Suburbs of Stockholm and the Suburban 'Small Cottage Scheme.'" An address in the City Hall of Stockholm, August 10, 1936. *Housing Index-Digest*, September 1–15, 1936, p. 37–38.

tom lands along the stream form a greenbelt, partly used for recreation and allotment gardens, partly left as a meadow cropped by a flock presumably of municipal sheep. Across the valley from the city bordering on the greenbelt lie the long low rows of Romerstadt and Praunheim, the pride of Frankfort's modern municipal housing. A nearby industrial zone affords employment opportunities.[7] Other noteworthy examples of how good city planning has been made possible through public ownership of large tracts, in addition to the garden suburbs of Stockholm and Manchester, already mentioned, are to be found in the United States in the three greenbelt towns of the Resettlement Administration near Cincinnati, Milwaukee, and Washington, D. C.

Better community planning, as well as better city and regional planning, is promoted by municipal land ownership. An attractive environment and stable homogeneous neighborhood is just as important, according to modern ideas of housing, as a conveniently planned and soundly built structure. Experience both here and abroad shows that for greatest economies in large-scale building operations and best results in planning a complete community, several hundreds or even several thousands of acres are needed in a single tract, to be turned directly from rural use into fully developed urban use. Public ownership makes possible the rapid and full development of a

[7] Bauer, Catherine: *Modern Housing*, New York, 1934, p. 172–173.

From *The American City* for July 1937

FIGURE 63.—Map of Stockholm, Sweden, and its metropolitan land reserves. Land reserves in gray; city area in black; suburban developed areas cross hatched

single community of limited size, instead of the simultaneous partial development of a number of scattered, unrelated subdivisions. Rapid development of municipal land, when subdivided, would be assured by "birth control" of building sites. Only a limited number would be opened at one time and developed with streets, utilities, parks, and school facilities. Expensive carrying charges, costly spotty development, and many square miles of dead subdivisions would thus be eliminated.[7a]

In many cities, however, heavy public investments in streets, utilities, schools, and transit systems in built-up sections, as well as private investments in sound buildings, make further public investments in developing outlying land inadvisable, unless needed to decrease densities in overcongested areas or to take care of an increase in population. In addition to various methods of redeveloping built-up areas recommended elsewhere in this report, municipal acqui-

[7a] Under the terms of the amended Constitution of the State of New York, adopted in 1938, the Legislature is given broad powers, in Article XVIII, to provide, "for low-rent housing for persons of low income as defined by law, or for the clearance, replanning, reconstruction and rehabilitation of substandard and insanitary areas, or for both such purposes, and for recreational and other facilities incidental or appurtenant thereto."

Sections 8 and 9 of this article stipulate that:

"8. Any agency of the state or any city, town, village, or public corporation, which is empowered by law to take private property by eminent domain for any of the public purposes specified in section one of this article, may be empowered by the Legislature to take property necessary for any such purpose but in excess of that required for public use after such purpose shall have been accomplished; and to improve and utilize such excess, wholly or partly for any other public purpose, or to lease or sell such excess with restrictions to preserve and protect such improvement or improvements.

"9. Subject to any limitation imposed by the Legislature, the state, or any city, town, village or public corporation, may acquire by purchase, gift, eminent domain or otherwise, such property as it may deem ultimately necessary or proper to effectuate the purposes of this article, or any of them, although temporarily not required for such purposes."

FIGURE 64.—Location of the Speke Estate in relation to the city of Liverpool, England (See figure 65)

sition and ownership of land are suggested. In his book, *Rehousing Urban America*, Henry Wright has pointed out the strategic importance, the economies in management costs, and the adequate community planning possible in rebuilding blighted areas without wholesale scrapping of present investments in streets and utilities. Gradual municipal acquisition of land would in many cases overcome the many difficulties at present encountered or to be expected in such suggested schemes. Much smaller areas than those recommended as most desirable in outlying unbuilt areas could be well planned and economically developed. Tracts might vary from a few acres, including one or more city blocks in densely built districts, to a hundred or more in partly built ragged subdivisions.

Public land ownership would also make possible the supplying of land for special housing purposes, such as tourist camps and trailer parks. The recent phenomenal growth in the number of house trailers will create an increasing demand for parks in or near cities, especially cities that attract many tourists. Not only could this need be met by suitably located and attractively developed trailer parks, but the problems of control and taxation might be more easily coped with.

A report less favorable to public land reserves than has usually resulted from European experience was made by the late Albert Schär, of Germany, in a 1932 study (unpublished) of *Land Policies of the State of Hamburg since 1924*. According to this report, Hamburg pursued a policy of accumulating land holdings long before the war. However, during the pre-war period it acquired these for specific purposes to carry out improvements in accordance with the city plan. After the war and particularly between 1924 and 1930, in contrast, it undertook to build up with great speed a very substantial land reserve. By 1930 there were in public ownership 70 percent of the 52 square miles of the city, a total of 36.8 square miles. Of these, 24.2 square miles were used for streets, squares, parks, cemeteries, hospitals, and other public purposes, and the balance of 12.6 square miles constituted the land reserve. Significant as these figures are, the rapidity with which the land-acquisition program was pursued appears to have been of even greater import in bringing about the consquences claimed by Mr. Schär.

The three major aims of the advocates of the land-acquisition program, according to Mr. Schär, were: first, to assist in the carrying out of city planning projects; second, to keep land prices low or at least stable; and third, to create great wealth to the community by securing the land-value increment. He does not deny that the first purpose was well served by the land-purchase program, although he does not attribute

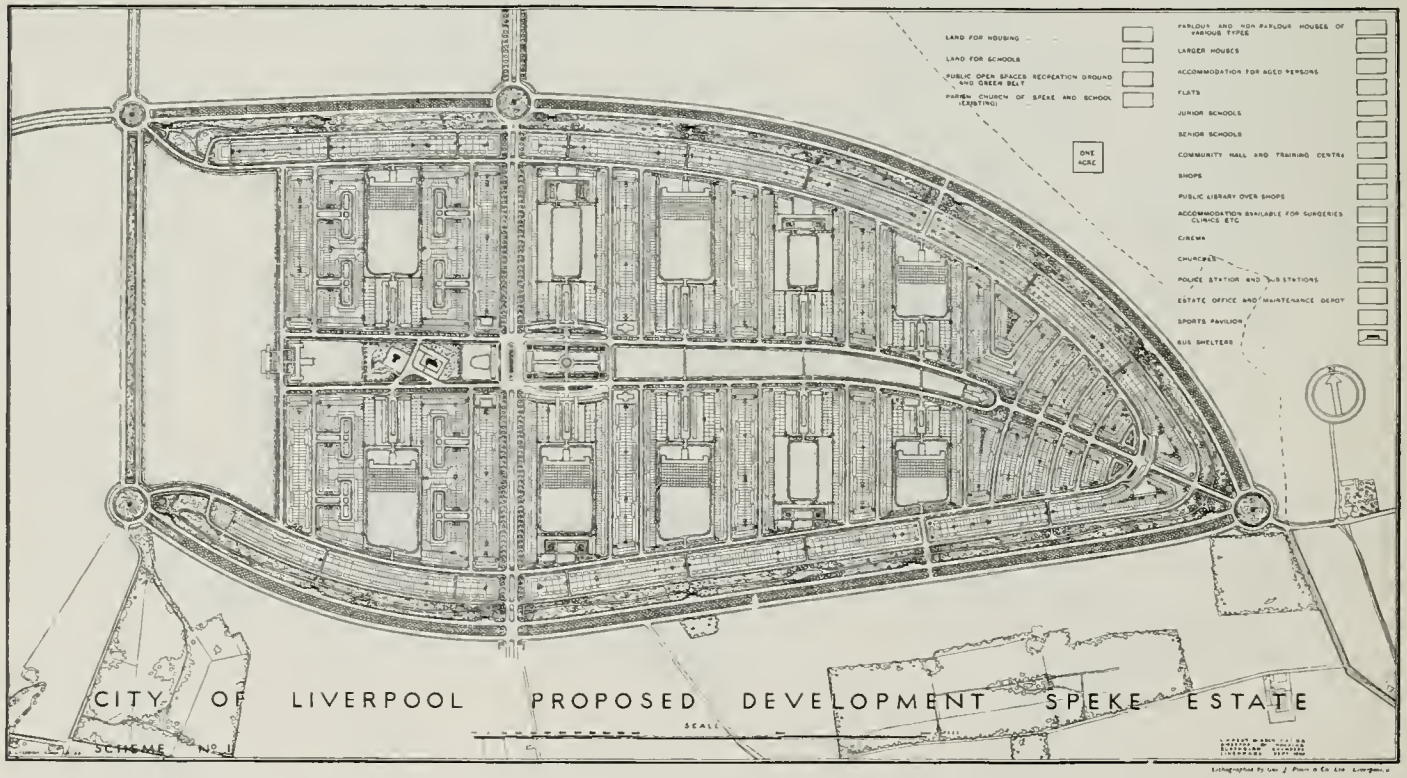



FIGURE 65.—A 650-acre public housing development of the city of Liverpool, England

A report of the director of housing of the city of Liverpool, dated October 17, 1936, contains the above plan and that shown in figure 64. The total area of the publicly owned Speke Estate, as shown in the larger map, is 2,216 acres, of which 418 are being reserved for an airport. The proposed housing development shown above will accomodate about 5,000 families on an area of about 650 acres

to it leading importance. He claims, however, with the support of what appears to be quite an adequate body of facts, that instead of keeping prices low or stabilizing them, prices have actually risen as a result of large purchases by the public. He attributes this to the natural stimulus to the real-estate market of a large purchaser with good credit, the willingness to pay high prices, and the high prices demanded by the authorities themselves for land sold by them, especially vacant land. Mr. Schär also challenges the claim that the public will greatly benefit in future years from these purchases through the increase in the value of this land reserve. Recognizing population increases as the major factor in the continued rise in value of urban land, he argues that the cities are not likely to grow in future as they did in the past; that, on the contrary, further technological advances and the breaking-up of large estates are likely to reverse the direction of rural-urban migration, which, added to the declining birth rate, will make Hamburg grow slowly, if at all, in future years.

Other undesirable consequences are also claimed by Mr. Schär. These, however, are of the kind customarily feared by the opponents of public expenditures of any kind. All have to do with the higher taxes that will have to be levied to finance them; reduced incomes from properties, increased rentals, and increased production costs in industry are among those mentioned. Mr. Schär also maintains that these large public outlays for land brought about a decrease in the purchasing power of the large body of citizens and enriched a very limited number of land proprietors; also that the investment of these funds by the recipients, in foreign countries and in capital equipment at home, resulted in actual loss of wealth to the community or increased technological unemployment.

This brief abstract of a lengthy document is believed to be of some importance in that it suggests that there may be such a thing as going too far or too fast in the acquisition of public land reserves; and, also, in that it calls attention to some possible dangers and gives warnings of the kind of objections likely to be raised by opponents to even a modest program of increased land ownership by cities.

In European cities, public land ownership has resulted in considerably lower land costs. In the case of Wythenshawe, the city of Manchester acquired 3,710 out of the 5,567 acres at agricultural value before any building was started. The estimate saving of some $5,000,000 will result in considerably lower rents or smaller public subsidy. Public ownership of building sites may also be used to lower and stabilize market prices. Cheap public sites are a "yardstick" for measuring the costs of private-land subdivision and should result in lowering the cost of private-building sites. Furthermore, in times of housing shortage, a plentiful supply of cheap public building land would aid in relieving the situation. In Stockholm, for instance, the city was able to counteract threatened inflation of land prices.[8] In Copenhagen, land speculation was effectively controlled during and after the war by the municipality selling its own land at low prices and also by extending other Government aid to housing conditional on low-land prices. Furthermore, in order to provide immediate employment in times of depression, housing projects could be begun on public land without loss of time in land acquisition. Also, in boom times, excessive speculative building could be discouraged by closing publicly owned land to building operations.

### Greenbelts and Green Wedges

It is no new idea that city expansion should be definitely limited by a surrounding greenbelt. Even as early as the reign of Queen Elizabeth, a proclamation was issued in 1580 commanding "all manner of persons, of what qualities soever they be, to desist and forbear from any newe buyldings of any house or tenement, within three miles from any of the gates of the sayd Citie of London, to serve for habitation or lodging for any person, where no former house hath bene knowen to have bene, in the memorie of such as are now living."[9] Although numerous attempts were made to enforce this and similar subsequent proclamations, the present size of London shows that Queen Elizabeth's "green girdle" was not effective. The idea, however, was never completely rejected and today is being supported, in theory at least, by many city planners and students of urban problems throughout the world—London included.

These authorities say that cities must not be allowed further unrestricted expansion and disorderly sprawling into rural areas, turning green fields and forests into dreary city streets, and making the countryside inaccessible to the poorer inhabitants of the interior districts. The greenbelt idea rests on the proposition that solidly built up cities can be too large, that definite limits of expansion must be assigned, and that further growth in the region must take place in outer satellite communities separated from the central city and from each other by wide green spaces. This method of city growth is to be effected by the public acquisition of a wide band of unbuilt land surrounding the city from which close building development is permanently banned. All communities that threaten to become too large should be thus "corsetted" by open fields, much

[8] Julin, Intendent Henning; from a lecture given to a group of American housing students, August 8, 1936, in Stockholm, *Housing Index-Digest*, September 1–15, 1936, p. 27.

[9] London County Council: "Positive Planning in Great Britain," in *Part I, Papers and General Reports, International Housing and Town Planning Congress*, London, 1935, p. 130.

as medieval fortifications kept towns from sprawling into the surrounding countryside.

A greenbelt not only limits the size of a community to a desirable maximum but protects it from inharmonious encroachments. The greenbelt also provides for congested urban areas' much-needed breathing space, a place where the smoke, dirt, and grime of the city are dissipated and the oxygen content of the air renewed. In the greenbelt might be located playing fields, golf courses, lakes for boating and swimming, allotment gardens, larger farms, meadows, and forests. The beauties and advantages of the countryside would be preserved on the very doorstep of the city.

Either in combination with greenbelts or alone, many authorities advocate the establishment of green wedges that would be gradually driven in farther and farther toward the heart of the city by acquiring land at their points. Such wedges not only provide breathing space and recreational areas but serve as corridors leading out to the open country and as barriers between different parts of the city. The municipal forests that reach right into the heart of such German cities as Hanover and many of the parkway developments in this country, such as the Westchester County Parkways in New York or Rock Creek Park in Washington, D. C., are good examples of green wedges.

#### European Experience and Opinion

Greenbelts are an integral part of the English garden cities, Letchworth and Welwyn, and of the new "greenbelt towns" of the Resettlement Administration in this country. Partial greenbelts or agricultural belts are found in many other planned developments in Europe. One of the most ambitious greenbelts ever undertaken is being planned to surround London. Land is now gradually being acquired by the many local authorities concerned, aided by the London County Council's offer to contribute £2,000,000 toward the cost. When completed, the greenbelt will not be continuous, due to intervening urban development, but will constitute a series of large permanent open spaces roughly forming a ring around the metropolis.[10]

The 10-year plan for the development of Moscow provides for a combination of greenbelt and green wedges. The boulevards radiating from the heart of the city are being planned as parkways, broadening as they approach the immense circular belt of forest and park land which is being developed beyond the city limits. The banks of the Moscow River and the numerous canals and lakes are also being developed as parkways, upon which a great deal of the city's new housing will front.

In this country, the difficulties of developing greenbelts around our major cities are very great. Large parcels of subdivided land surround most of them. These vacant subdivisions often provide enough unused space to house all over again the present population of the city. In a wide zone outside the subdivisions, speculation has raised acreage prices high above their agricultural value. Scattered, spotty development at minor crossroads, ribbon development along major highways, and clusters of houses in small villages make it particularly difficult to assemble a wide continuous belt. To these disadvantages are added many already mentioned elsewhere in this report in connection with assembling land for large scale housing developments.

For most cities also, it would appear that the cost of a greenbelt would be far beyond the capacity of the city to pay. Under present methods of taxation, this is undoubtedly true. However, new principles and practices in taxation might reduce land costs or produce increased municipal revenues, part of which could be very appropriately spent on greenbelts or green wedges. The removal of potential building sites from the market by this permanent dedication of land to greenbelts or wedges or any open spaces, by reducing the total supply of accessible building land without in any way reducing the demand, would increase the value of the remaining sites still in the market. According to Sir Raymond Unwin, who ably expounds this thesis,

> No destruction of probable or possible building increment is or need be involved; but merely a redistribution, under which the expectation of increment value which is reduced or extinguished on some land, will be at least equaled by the increased expectation which will thereby be conferred on other land.[11]

Because the owners to whom site value is thus transferred are many, and scattered all over the city, the increased values accruing to them are most difficult to assess fairly for special assessment levies. They could probably be recouped to the community most equitably by a tax on increments in land value, as discussed in detail elsewhere in this report. Land value taxation would be another means of capturing much of the transferred land values. Assuming some such system of taxation, the city would recoup from benefited land owners most of the cost of the greenbelt. If much of the land of the greenbelt were kept in its original agricultural use and leased back to the former owner, the city, over a period of years, would get back a large part of its original investment, thus obtaining a greenbelt or green wedges at practically no cost.

Land not yet subdivided is often found in low-lying stream valleys where swampy conditions or liability to flood have made building impossible without expensive filling. Such reclaimed marshland along the Nidda River in Frankfort-on-Main, Germany, forms an ef-

[10] London County Council, op. cit., p. 133.

[11] Unwin, Sir Raymond: "Town and Country Planning and Land Values," in the *Contemporary Review*, April 1932, vol. 141, p. 467.

fective greenbelt. Filling shallow water along river banks or lake shores has produced fine continuous park systems in Chicago, Milwaukee, Washington, D. C., and elsewhere. Steep-sided or otherwise unusual stream valleys, often most attractive for recreational use, have been frequently made into fine parks. Where it is impossible for physical or financial reasons to acquire continuous greenbelts or wedges, those tracts that are acquired may be connected by means of narrow parkway strips. The larger Chicago parks have been connected in this way by boulevards, forming an inner circle of parks in the closely built areas. Outside the city proper, the Cook County Forest Preserves are a fine beginning for an outlying greenbelt. It is estimated that for perhaps $50,000,000 at present prices (the equivalent of a few large downtown skyscrapers) a belt a mile or two mide with only a few breaks could be acquired for Chicago.

Town forests, although little publicized, are quite common in the United States, especially in New England and New York, very often on watershed property. A few isolated instances in this country and a wealth of European experience show that, under scientific management, the timber yield can be made to contribute to municipal revenue. Such forest areas as exist, besides providing recreational opportunities, may form important parts of a greenbelt or green wedge.

Public acquisition of land for greenbelts or wedges is not always necessary. England has had a limited amount of success with "sterilization" of land against building. In some cases compensation is paid to the owner. In the United States, the same objective might be reached by an extension of the principle of zoning to include agricultural, forestry, or private recreational uses. County zoning has been used as a step in this direction. In the light of the present weaknesses of

Courtesy of Atlas Topographique de la Suisse

FIGURE 66.—Zoning plan for the development of the Canton of Geneva, Switzerland

zoning ordinances and administration and the probable attitude of the courts for many years to come, it is doubtful if an extension of zoning would aid in permanently preserving greenbelts or green wedges, except, perhaps, in limited areas as a supplement to public ownership.

In spite of the serious difficulties in acquiring greenbelts and green wedges at present, their importance in bringing about rational city building makes it desirable that cities make plans for their development. Especially in cities expecting considerable growth, such plans should be discussed and prepared so that city officials, backed by public opinion, will be in a position gradually to acquire the land when financial circumstances permit.

From *The American City* for August 1936 (Airplane view by McLaughlin Aerial Surveys)

FIGURE 67.—Parts of three boroughs (Manhattan, Bronx, and Queens) of New York City, showing the Triborough and Pennsylvania railroad bridges. New York is gradually improving and making more accessible publicly owned islands and waterfront properties as recreation areas

## Land for Parks, Playgrounds, and Airports

As originally planned, there would have appeared, under the above heading, statistics as to the extent of public recreational land in American cities, a discussion of the growth of recreational facilities, opinions from various authorities as to the extent of area and facilities required for different types of recreation, data from several cities as to water front redemption, and a discussion of the relation of airports to city and region and of the acquisition of sites for airports. Because of the space limits which have been set for this Urban Land Policies report, and of the fact that much material on the subjects just mentioned is readily available elsewhere, this proposed section of the present report has been omitted.

## Managing a City's Real Estate

Most cities, although often the largest landholder within their own boundaries, are woefully backward in methods of handling their own real estate. Exclusive of streets and alleys, cities commonly own between 5 and 15 percent of their total land area within the city limits and sometimes large tracts outside as well. According to one observer:

> Any private institution with such extensive holdings would consider the management of its property a major function, but few American cities have even so much as a complete list of their holdings. Deeds and records of municipally owned property are usually to be found in the files of the department to which the property is assigned. Nor is there any integration of the functions of real estate management. The department of public works, charged with securing easements and rights-of-way may be located in one building; the legal department, which traces titles and conducts condemnation proceedings, in another; and the recorder of deeds in still a third office. Such disorganization has naturally resulted in chaos and extravagance. Property no longer needed by one department may be allowed to remain idle, while another department pays a high price for a neighboring property. And it is commonly known that prices paid by cities for land, especially in condemnation proceedings, are often exorbitant.[12]

Not all cities, however, suffer from such haphazard methods of handling their real estate. Municipal real estate offices or bureaus have been established in a few cities, including Milwaukee, Newark, Rochester, Asheville, Los Angeles, Chicago, and San Francisco.[13] Some of the considerations involved in setting up and operating a municipal real estate office, based on experience in various cities, are discussed below:

*Organization.*—Ordinarily there should be a central office, or at least some one official, charged with the administration and coordination of the city's real estate activities. In the smaller cities it will probably be impractical to have a full-time official, but it is impossible to draw the line between large and small cities in this respect. The extent of the city's holdings and the volume of its real estate transactions, rather than the population of the city, are the determining factors. Asheville, with a little over 50,000 population, is the smallest city to have a full-time real estate agent at present, but this figure is by no means a minimum. The savings that might be effected even in a much smaller city would probably more than cover the salary of one full-time official. If there is insufficient work for a full-time real estate agent, it is still advisable to have the responsibility for all real estate functions vested in some other official on a part-time basis. From this minimum the size of the real estate division will vary with the size of the city and the volume of its transactions. In Milwaukee the staff has grown from 1 in 1922 to 8 in 1936; and in Los Angeles the staff numbers 31. The outline of functions which is to follow may be of some help in estimating the necessary staff for any particular city.

The essential qualifications for a city real estate agent are a familiarity with local real estate values, experience in appraisal of real estate, knowledge of real estate law and experience in tracing titles, confidence of local real estate operators resulting from a reputation for integrity and sound judgment. Such qualifications are most likely to be found in a man with years of experience as a local real estate operator. The specification of a local man is based upon the presumption that the staff will, for the first few years at least, be so small that each member must be able to participate in all functions. In a larger staff, where the work can be more specialized, outside men should be eligible to appointment. For a larger staff a variety of backgrounds to suit the several phases of the work may be desirable. Again referring to Milwaukee, the city real estate agent had been for many years a prominent realtor in the city; one of his staff was recruited from the department of public works where he had specialized in problems relating to easements and rights-of-way; another from the office of the recorder of deeds; and another from the right-of-way division of a large public utility corporation.

As to the proper location of the real estate office within the framework of city government there is a considerable diversity of practice. In several cities it is a division of the department of public works, because of right-of-way and easement duties; in Rochester it is a more or less independent division in the finance department, a location justified by the purchasing and rent-collecting functions; and in Milwaukee it is connected with the city plan commission. The exact location is of less importance than the working relationships established, but for an extensive program, such as outlined below, affiliation with the planning office seems to be the most appropriate location. * * *

*Inventory and record keeping.*—The first duty of the real estate office, chronologically speaking, is to compile complete and accurate records. These records form the basis for the effective administration of the more direct functions of the division. Most important of all is a central inventory of all municipality owned real estate. Each parcel should be given an index card. * * * As a useful supplement to the card index, the Milwaukee department is preparing a loose-leaf atlas of quarter-section maps showing in color all city-owned properties. Thus, when the city plan commission is considering the assembly of land for public improvements, it can be seen at a glance which parcels in a given area are already in the city's possession. Such an inventory is also useful in facilitating interdepartmental transfers of property; in determining sites for public buildings, playgrounds, etc.; and in supplying evidence in condemna-

[12] Woolpert, Elton D.: "Managing a City's Real Estate," in *Public Management*, August 1936, p. 230–231.

[13] *Ibid.*, p. 231.

tion actions. The inventory must be kept current, of course, by the addition of a card for each newly acquired property.

Other records include data on transfer of property between private parties, to aid in the appraisal of market value; rental and lease rates and trends in the city; rental receipts and delinquencies on city-owned property; and repair and maintenance data on municipal properties rented to private persons. * * *

*Rentals and leases.*—Nearly every city owns some properties which it is holding until such time as an advantageous sale can be made or until the improvement for which it was acquired can be undertaken. Particularly in the case of improved properties there is an opportunity for turning these holdings into sources of revenue for the city by rental or by lease. The rental division of the Milwaukee department offers an excellent model of good practice. During 1935 the department supervised the billing and collection of rentals from 107 tenants and deposited approximately $40,000 into the city treasury from such accounts. Rentals are managed as they would be by the rental department of a private real estate office. Tenants are carefully investigated before they are allowed to rent, and every effort is made to eliminate transients and persons who might be objectionable to the neighborhood. This is particularly true in the case of apartment house tenants. Rental charges are based upon community averages, although lower rentals will be permitted rather than allow the building to remain vacant. In the assembly of land for a public improvement some residential parcels are acquired several years before construction can be begun. In such cases the original owner is encouraged to remain as a tenant, and as a rough general rule the rental is fixed at 6 percent of the sale price until the building is demolished. This rule is modified or disregarded for other types of property, apartments having grossed better than 20 percent. In a few cases it has been possible to make unimproved properties return an income, one vacant lot in the business district having been rented out as a parking lot.[14]

The rental and leasing function of a real estate office will take on larger and larger proportions, as a city gradually acquires more and more land to be leased for housing purposes or for agricultural or other uses in a greenbelt or green wedge. Instead of regarding leases as a temporary expedient to obtain income from a property until desired for some other public use, leasing will become a method of permanent control and a permanent source of income. New York in its early period leased public land to private individuals for 5 percent of the capital value. This practice was abandoned when the revenue from the sale of municipal land was used to help pay off municipal debts. The shortsightedness of this policy was appreciated when it became necessary for the city to buy back much of the land at greatly appreciated prices. Chicago, St. Louis, and other cities still possess remnants of early Federal grants of land whose income was to aid in support of schools. In these cities, the public leasehold system has been in operation over a long period of years in respect to these limited amounts of urban land. Although difficulties have arisen, such as considerable pressure exerted by leaseholders at various times to prevent reappraisal and higher rents in conformity with higher land values, cities appear to have resisted such demands reasonably well and have maintained over a period of years a considerable income.[15] In San Francisco, the real estate department, which was established when the new city charter came into effect in 1932, has increased rentals from city-owned properties, with the exception of those under long-term leases, from 20 to 100 percent.[16]

As the public leasehold system comes more widely into use, increasing political pressure will undoubtedly be brought to bear on city officials to set rents at considerably lower levels than is current for similar private property. In the case of housing for families of low income, the city council might authorize such a procedure as a matter of public policy. Under all conditions, however, city real estate officials must be able to resist improper political influences. Since long-term leases are often computed at a percentage of the capital value of property, the problem would be very similar to that of the ordinary tax assessor's office of maintaining fair and equitable assessments. Improper political machinations would tend to be no greater in respect to public leases than in respect to tax assessments. If cities come to rely more and more on income from leases and less on real estate taxes, public attention to leasehold policies and rents will tend to make improper administration for political purposes less likely.

### Municipal Lease of Private Land

Another aspect of municipal leasehold which might very well be handled by the city real estate office is the leasing of private property for municipal purposes. Although public acquisition is generally preferable to lease, in some instances a short-term lease—from 1 to 10 or 15 years—has considerable advantages. For instance, a city may find it cheaper to lease than to buy if the tract desired for a playground, parking lot, or other use has a high speculative value which would have to be paid, whether acquisition was by purchase or condemnation. If no market for the parcel develops at the speculative price, the lease may be renewed until the price comes down to a reasonable figure at which the city may buy. If the leased tract is to be used for a public building, such as a school, library, or fire house, the city's investment may be protected by an option to buy at a fair value at the end of the lease or by a requirement

[14] *Ibid.*, p. 231–234.

[15] Shine, Mary L.: "The Public Leasehold System in the United States," in the *Journal of Land and Public Utility Economics*, July 1925.

[16] From an unpublished letter to Mr. S. Raymond Dobbs from Joseph J. Phillips, director of property of the City and County of San Francisco, September 23, 1936.

that the city must be compensated for the value of its improvements. Another situation in which it might be more advantageous for a city to lease than to buy is at a time when municipal funds are not available, and loans for land acquisition can be obtained only at high cost. Data on rents or leases of similar properties in the files of the city real estate office will enable the city to secure favorable terms. Municipal lease of private land, however, should be regarded as an occasional expedient rather than a permanent policy. In most cases, cities should acquire title to a property, even if it appears at the time that the proposed use is only temporary.

**Municipal Land Acquisition**

Probably the most prominent function to be performed by a city real-estate office, and the one by which its success or failure is most likely to be judged, is the acquisition of land. Before a city undertakes an extensive land-acquisition program for housing, greenbelts, and green wedges as proposed in this report, it must first set its own house in order, at least insofar as the management of its present real estate holdings is concerned. Having established an efficient, suitably staffed real estate department, a city is then administratively prepared to proceed with a large-scale land-acquisition program. Financial and legal obstacles to such a program are discussed elsewhere in this report.

Whatever economies can be made by efficient real estate departments backed by suitable legislation relating to land acquisition through purchase, condemnation, or tax forclosure,[17] the buying of large amounts of real estate for open spaces or future development will be too costly unless a long-term program of municipal land acquisition is adopted. All too frequent is the story of the city that fails to acquire a school site in a rapidly developing section until what little vacant land is left has doubled or tripled in price since the original approval of the subdivision by the city. Not only is the site finally acquired at a high price, but it often proves to be too small to afford adequate play space or setting for the building.

The experience of some European cities in long-term buying is of interest. The large program of land acquisition of Stockholm has already been discussed.[18] In Germany, nearly all cities have since the end of the nineteenth century consistently followed a policy of increasing their traditional demesne by systematic purchases of land both within and outside their boundaries. State governments have encouraged cities to buy land by permitting them to borrow large sums of money to finance purchases, by assisting in arranging loans, and even by direct financial assistance. The experience of Mannheim is a good example of pre-war municipal land-purchase policies. The city, already rich in public lands, decided in 1888 to devote at least 10 percent of the proceeds of all sales of town land to the purchase of new property. By 1914, its holdings totaled 7,500 acres, or more than 40 percent of the entire area of the municipality. Between 1892 and 1905, it was a party to real estate transfers amounting to 16 percent in number and 8½ percent in value of all real estate transfers in the city. Its largest holdings were vacant tracts on the outskirts bought at favorable prices in advance of building development.[19]

After the war, due to the very low land prices, many German cities were able to acquire great tracts at a cost sometimes as low as one-fifth of pre-war values. Berlin, for instance, bought nearly 10,000 acres of land within its boundaries.[20] Although conflicting figures are given for Hamburg, net acquisition both within and outside the city probably amounted to 6,000 or 7,000 acres between 1925 and 1930. During this period, the city was not only the largest landowner but also the largest purchaser in the market. Of all land sold within the Hamburg State Region, the city bought 34 percent of the built-upon land and 62 percent of the vacant land. As might be expected, with such a large buyer always in the market, prices rose considerably especially on vacant land.[21] In view of the abnormally low prices immediately after the war, however, it may be questioned whether the State paid more than reasonable prices for land.

In the Netherlands, according to a report of the International Labour Office:

> Most of the larger municipalities have for some years past adopted a well-defined land policy, and have by degrees purchased plots of building land on the outskirts of the towns. These sites are generally acquired by mutual agreement when favorable opportunities arise in areas still retaining their rural character.[22]

This policy of long-term buying in advance of need as practiced notably by cities in the Netherlands, Germany, and the Scandinavian countries is in contrast to the British policy of limiting municipalities in the amount of land bought for future requirements.[23] According to Ernest M. Fisher and Richard U. Ratcliff:

[17] See Section II (b).

[18] See discussion of Public Ownership of Land for Housing Purposes.

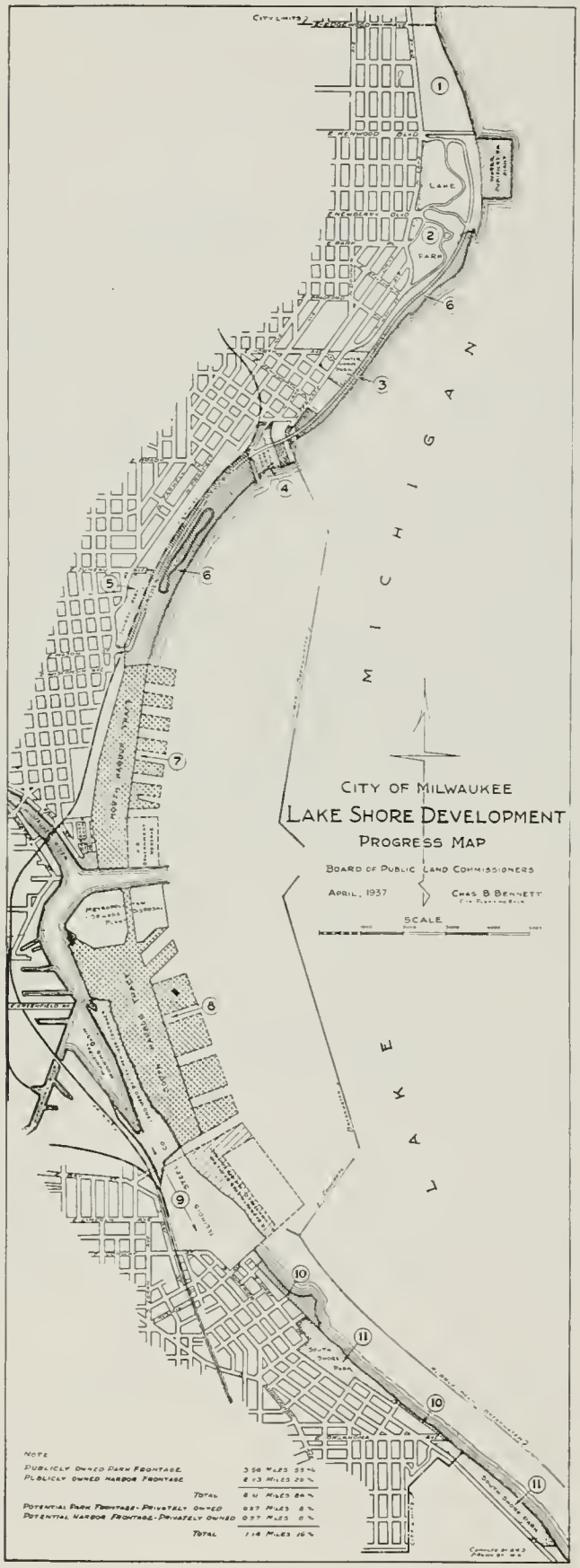
[19] Dawson, William H.: *Municipal Life and Government in Germany.* London, 1914, pp. 135–136.

[20] Bauer, Catherine: *Modern Housing.* New York, 1934, p. 276.

[21] Schär, Alfred: *Land Policies of the State of Hamburg Since 1924* summarized above in this report.

[22] International Labuor Office: *Housing Policy in Europe,* Geneva, 1930, p. 112.

[23] Housing Act of 1925, Sec. 58, allows the purchase of land by agreement for rehousing working class families in advance of needs, but only with the approval of the Minister of Health Housing Act of 1935, Sec. 70, allows compulsory purchase 10 years in advance of needs as approved by the Minister of Health.




The ownership by municipalities of large areas of undeveloped land at the urban periphery in Holland, Germany, and the Scandinavian countries has proven to be a major advantage in contrast with England, where the lack of available land acquired at low prices for housing purposes has increased the costs of the program, and slowed up activity.[24]

In the United States, cities cannot legally acquire land unless it is for a public purpose. What constitutes a public purpose and to what extent cities may legally buy land in advance of needs is discussed elsewhere in this report.[25] Long-term land acquisition policies in this country have been confined to gradual acquisition of land for specific municipal services or improvements. Among the cities where extensive acquisitions of land for park purposes have been successfully carried out are: Chicago, Council Bluffs, Houston, Milwaukee, Minneapolis, Oklahoma City, Philadelphia, Seattle, Spokane, Kansas City, Missouri, and Westchester County, New York. In Milwaukee, the policy of buying tracts of from 10 to 20 acres outside the city for future school and playground sites is especially noteworthy.[26]

The relationship between city planning and long-term policies of municipal land acquisition is a very close one. The advent of improved and more involved city planning makes better techniques of acquiring land at low cost more and more important for the future rational development of our cities. Conversely, extensive programs of municipal land acquisition must rest on soundly conceived, far-sighted city planning. Although even the best city plans can hardly be expected to be carried out without some modification, their importance as the basis for long-term land acquisition cannot be overemphasized.

Heads of city departments must be pressed for estimates of their land needs as far in advance as practicable. Especially in the acquisition of land for housing, greenbelts, or green wedges are long-time plans essential in order that land may gradually be acquired when it is on the market at low prices. The city real estate office should appear as a party whenever land is offered for sale and buy suitable parcels when reasonably priced.

Where legally possible, land acquisitions should not be limited entirely to areas marked on the city plan for a particular public use, either immediately or in the

[24] Press Release No. 134 of the Federal Housing Administration, September 19, 1936.

[25] See discussion of Methods of Acquiring and Disposing of Public Land: Purchase.

[26] Hubbard, T. K. and H. V.: *Our Cities Today and Tomorrow*. Cambridge, 1929, pp. 248–255.

FIGURE 68.—Numbers in circles designate (1) land not under city control; (2) Lake Park; (3) Water Works Park; (4) McKinley Beach Park; (5) Juneau Park; (6) Lincoln Memorial Park; (7) North Harbor Tract; (8) South Harbor Tract; (9) Illinois Steel Tract; (10) South Shore Drive; (11) South Shore Park

near future. Although major attention should be given to rounding out areas needed to complete the plan, the city should not miss good opportunities to buy up other vacant or slightly developed tracts that are on the market at a low price. Sometimes, such parcels may be traded for areas that are particularly needed. Often a private owner, although not willing to sell a particular site needed by the city for rounding out a land assembly, would be willing to trade it for another suitable piece of city-owned property. He would thus be relieved of the time, expense, and uncertainty involved in acquiring an alternative property. If a city had a large assortment of available properties, both the city and the private owner might, by a trade, obtain land better suited for their particular purposes. In some German cities with large landholdings, this trading policy has frequently been very effective.

Many parcels not marked as needed for public use on the city plan might at a later date become necessary, due to increases in city functions or unforeseen shifts in city development. Furthermore, municipal acquisition of land other than that specifically needed for carrying out the city plan could very well aid in the reorganization of poorly plotted subdivisions or badly developed blighted areas. As a large landholder, the municipality might very properly take the lead in bringing about reorganization by some of the methods suggested elsewhere in this report.[27]

### Effects of Municipal Land Acquisition on the Real Estate Market

Great care must be exercised in carrying out a municipal-purchase program to prevent land prices from rising. Not only would such a rise make increasingly difficult the continuation of the acquisition program, but it would make impossible some of the major benefits that large municipal land reserves might be used to obtain. As has been pointed out elsewhere in this report, large tracts of publicly owned land available for building purposes might be beneficially used to lower and stabilize market prices. In the long run, lower land prices would tend to keep down rents and the costs of home ownership, to the particular advantage of low-income families. Low land prices also aid in the economical provision of parks, playgrounds, etc., and give greater effectiveness to city planning. A municipal land-acquisition program, therefore, must not be allowed to bring about a general increase in land prices.

In view of the fact that the entrance of potentially large buyers into the market tends to raise prices, most cities should not buy for other than immediate needs except when other factors are tending to lower the market to a greater extent than its own purchases tend to raise prices. In the past only a general depression has had much effect in bringing down skyrocketing prices for land in and around our cities. In the future, by applying policies such as are discussed elsewhere in this report, including land-value taxation, better acquisition procedures, and more effective zoning, cities may be able to keep down land prices to a reasonable level even in boom times. Cities which can reasonably expect considerable increases in population may be justified in proceeding with a large-scale land-acquisition program even in the face of rising prices, if the other socially desirable effects of land reserves will offset the undesirable effects of high prices. For such cities, a nice balance must be struck, requiring thorough study and keen judgment, between the adverse and beneficial results. In the majority of cities, where large increases in population cannot be expected because of declining birth rates and the slowing up of immigration, large purchase programs must be confined to times when the real-estate market is sluggish.[27]

### Municipal Ownership as a Method of Putting Vacant Land to Use

Public acquisition should be used as an instrument in minimizing the social and economic wastes involved in unused urban land. Although the best ultimate use for every vacant urban tract cannot be found immediately, it should be recognized that, like unemployed men, unemployed land, even if assessed at fair prices and not tax-delinquent, represents substantial social and economic losses to the community. For land as well as for men, useful jobs, whether temporary or permanent, are much to be preferred to unproductive idleness. Under public ownership of wider extent than that required for carrying out the city plan, our cities would even more speedily be supplied with public golf courses, artificial lakes, town forests, improved water fronts, tennis courts, swimming pools and other opportunities for recreation, cultural and esthetic enjoyment.

Public acquisition of suitable vacant land devoted to these open space uses would tend to encourage timely development of the remaining vacant parcels in private ownership by removing competing building sites from the market. Large amounts of public land combined with stricter zoning control over private land, as discussed elsewhere in this report, can be used as effective aids to rational city development.

### Financing Land Purchases

Though cities obtain a more adequate statutory basis for an effective land-purchase policy and though efficient municipal real-estate offices become administratively prepared to carry out extensive purchase and

[27] See discussion elsewhere in this report on plans proposed by the New York Building Congress, the National Association of Real Estate Boards, and others.

management functions, the problem of financing such purchases will still remain.

Because of the present fiscal condition and method of taxation of most cities, few local governments may be willing or able to spend even moderate sums on land purchases in the near future. Several factors, however, point to more adequate local funds in coming years. With the beginning of economic recovery, a number of cities found that during the fiscal year 1935 the payment of back taxes resulted in tax collections exceeding the tax levy.[28] Furthermore, through better city planning and control of real estate subdivisions, cities may eliminate wasteful methods of land development entailing needless or excessive costs for public improvements. Changes in methods of taxation as proposed in this report should, over a period of years, yield more adequate local revenues and lower land costs. If cities must wait, however, to reap the benefits of these reforms before undertaking a land-purchase program, the initiation of such a program might be put off until its benefits could not be fully enjoyed for several decades.

Proposals have been recently made that the Federal Government should give grants-in-aid to municipalities to purchase land for housing purposes. A report by Frederic A. Delano, Chairman of the Central Housing Committee, published in *The American City* for January 1937, includes the following passages:

> Federal action can be most effective by enlisting the cooperation of private enterprise and local governments. There is needed a flexible method of improving housing conditions of our lower income groups by stimulating our construction industry, safeguarding the sound development of our cities, and giving full responsibility to the local authorities with only general guidance and assistance from the Federal Government. It should be based on the traditional method of assistance by the Federal Government termed "grants-in-aid," by which local governments are enabled to assume the administrative responsibilities which they are best able to exercise. * * *
>
> The Federal Government gave our railways land in exchange for their services in spreading our population over the continent, and granted homesteads to any who would undertake to develop them. It would be only reasonable for the Federal Government to assist local governments to purchase land for two purposes: first, to help municipalities provide low-rent housing for families unable to afford shelter of minimum standards; and, second, to stabilize the value of low-cost residential neighborhoods whenever protection by zoning regulations is incomplete, thus promoting simultaneously the home-building industry and sound community planning. With these ends in mind, the following policy is suggested:
>
> The Federal Government might properly offer to pay a certain percentage of the cost of acquisition of land by municipalities, on condition that the municipality, in using such land, should take suitable precautions to insure the sound development of the neighborhood. The Federal Government should be careful not to subsidize the development of neighborhoods of jerry-built houses, nor of surplus residential sections, nor of poorly planned communities. It should offer financial assistance only when municipalities follow a proper and well-considered housing and land-use policy. * * *
>
> The policy of grants-in-aid for land acquisition would promote decentralization of administration, and encourage the participation of small- and medium-sized citizes which are not capable of maintaining a technical housing authority for direct municipal construction.[29]

Similarly, the report of the Committee on Housing of the Third National Conference on Labor Legislation, after mentioning the desirability of public ownership of land for housing, recommends that the next Congress enact housing legislation which would include provision for Federal aid to municipalities or local housing authorities for the purpose of acquiring land for housing in advance of immediate needs.[30]

We recommend that Federal action as suggested by Mr. Delano and others be provided for by law under proper safeguards. We further recommend that such provisions of Federal legislation be so drawn that grants-in-aid may be made not only for strictly housing purposes but also for related purposes in connection with the wider problems of city development, such as the reclamation of slum and blighted areas for other uses when housing is not the most appropriate use, the provision of greenbelts and green wedges around and penetrating into our cities, and river-front parks in areas subject to destructive floods.

### To Forestall Land-Socialization

For some of the shortcomings in our current urban land policies, the preceding pages have suggested palliatives or cures: for overcrowding and other antisocial land-uses, more adequate zoning and building codes and power to demolish unfit structures; for premature or ill-designed subdivisions, more scientific and effective planning and control of exploitation; for private absorption of, or gambling in, land values which the community's activities and expenditures create, land-value taxation, benefit assessments, or unearned-increment levies. Through these and other devices herein suggested, the municipalities of the future will be able to avoid many of the mistakes too common to the cities of the past and present.

Unless our State and municipal governments have the foresight and the courage to adopt rational urban land policies, the alternative might conceivably be a growing demand for the *complete* restoration to the

[28] Bird, Frederick L.: *The Trend of Tax Delinquency, 1930–1935*. Municipal Service Department, Dun & Bradstreet, Inc.

[29] Delano, Frederic A.: "To Meet the Housing Needs of the Lower Income Groups: A Tentative Program for Federal Cooperation with Local Governments and Private Enterprise." *The American City*, January 1937.

[30] *Reports of Committees and Resolutions Adopted by Third National Conference on Labor Legislation*, November 9, 10, 11, 1936. Government Printing Office.

people, as a present rather than an ultimate reality, of the land-ownership which, in the Constitutions of the States of Wisconsin and South Carolina, for example, is guaranteed to them in the clause which declares that:

> The people of this State, in their right of sovereignty, are deemed to possess the original and ultimate property in and to all lands within the jurisdiction of the State.[31]

The case for private ownership of land may be briefly put as follows:

1. Without the protection of ownership, men would not have spent their life blood in improving their property. The primary task in settling wild land on the frontier is undertaken only because of the assurance that what a man can clear and cultivate and build upon is his exclusively to have and to hold, or to sell or bequeath as he may desire. Not only does he deserve ownership for his risk, but he is entitled also to any additional value which society may give his land by building a community around him. Without this protection and reward, our booming civilization would have lagged and stumbled. Such material progress as the centuries have seen throughout the world has had private property in land as its inevitable concomitant. Social sanction for individual titles to much of the earth's surface has resulted from its association with the rise and maintenance of civilization.

2. Under public ownership, corruption and red tape would enter into the handling of land. When strict rules are laid down, as they must always be in government administration, handicaps to efficient or economical land uses result. In hard times, a government cannot disrupt its organization by being lenient to needy tenants, whereas a private owner can. Over and over again, it has been proved that private administration is superior to public, and land, above all, should be kept from the fate of governmental regimentation.

Such is the argument, briefly put, for the private ownership of land. Those who take the opposite point of view and who advocate that American municipalities gradually acquire by constitutional means their entire underlying land offer in support of their recommendations such facts or assumptions as the following:

1. The land and the sea and the sky were created or evolved before man. When man finally came, he found them awaiting his use. He had no part in their creation, yet they are necessary to his existence. Without land, a man has no place to set his foot. Thus, we see the danger inherent in the private ownership of land. Those in whom land-titles are vested can exclude their fellow humans from the earth if they so desire; the others cannot even *build* a place to stand on. Therefore, there can be no inherent right to exclusive ownership; the land is the natural heritage of society, and every human being has a right to live upon it.

2. For a great many years valuable land has been largely monopolized. Ever since the disappearance of the frontier we have watched the growth of a propertyless class living at the mercy of landowners. Wealth increases with scientific advance, but the holders of title to the surface of the earth are able, without rendering commensurate service, to deprive the great masses of mankind of their proportionate share of the fruits of their productivity. This is not pure theory. If one follows the history of wages in all countries, he will see that average wages, in proportion to the total national income, start downward simultaneously with the disappearance of the frontier. As soon as access to the land is denied, there is no choice for most men but to sell their labor to others for what they can get. Why has the wage structure of the United States been so far above that of other nations? Largely because we are a new country, and our frontier land has only recently been exhausted.

3. It is the duty of the State to protect the freedom and security of its citizens, and political freedom is empty without economic freedom. Private ownership of land has ceased to fulfill the purpose it once had of providing maximum economic security for all. Now the minority only is secure.

4. Urban ground rents, if not collected by the community that creates them, are certain to be collected by landowners who do not create them.

5. Forward-looking municipalities the world over are recognizing the need for increased land in public ownership, for recreation, low-rent housing, school sites, and other purposes, and are making plans for adding to their landholdings within, and sometimes beyond, their corporate limits.

6. Public administration of land would involve no insuperable difficulties. It is primarily a legal and fiscal problem. Public interest would be paramount, and contrary to the contentions of some, a great amount of corruption would be eliminated from government. Instead of speculative landowners absorbing much of the benefit of population growth and public expenditures,

[31] In general, the law of any State is the common law of England, except as altered by the State or Federal constitutions or statutes. In his work on Blackstone, Dean George Chase says (p. 287): "Even in this country, the owner of land stands in a relation to the State which corresponds, in some degree, to feudal tenure; for whenever the title to land fails, through defect of heirs, the land reverts by escheat to the State, which therefore occupies, so far as the doctrine of reverter is concerned, the position of paramount lord. Each State, in its right of sovereignty, is deemed to possess the original and ultimate property in all the lands included within its jurisdiction."

the returns on public improvements could be used to pay their cost or be put into more public improvements, with only the best interest of the community in mind.

7. If any city had owned, and retained from its inception, title to its entire site, that city would have been planned more scientifically, developed more rationally, and be less burdened with taxes than the ordinary city of today.

8. Ownership of both site and building is not essential to the development of land for business or residential purposes. Witness the extensive use of the leasehold system in many cities, the rents accruing, however, to private owners rather than to the communities that have created them.

9. Our present system of land tenure encourages the use in many cases of the less desirable land in a city, or of land outside the city's limits, while much desirable land within the city is held vacant or poorly improved for possible speculative gain.

10. Assuming the public interest to demand the retention, under proper controls, of our capitalistic system, there must be recognition of the fact that land-gambling is a parasitic trade, and rejection of the too common assumption that mere land speculators and jerry-builders should be permitted to rank with high-grade realtors, manufacturers, merchants, and bankers, as members of the local business community.

Notwithstanding the cogency of many of these arguments, the authors of this report are not prepared to accept as conclusive the case for the public ownership of all urban land. They do believe, however, that the time has come for a Nation-wide recognition of the fact that the tenure and use of urban land are matters of urgent concern; that a larger measure than heretofore of public ownership of land, and of protection of socially beneficial private uses, would be in the public interest; and that orderly—and, in some cases, quite speedy—tax reform is essential to the well-being of our American municipalities and to rational urban development.

# PART III—APPENDIX A
# BRINGING ZONING UP-TO-DATE[1]

## The Use Regulations

One of the reasons why cities are no more progressive than they are is found in the fact that they seldom appraise in an objective manner such progress as they make. As a consequence, they little appreciate how far they may, within a comparatively short time, fall behind in such spheres of civic leadership as zoning, housing, building regulation, traffic control or city planning. In 1920, for instance, a city may have achieved a considerable reputation as a progressive community through the adoption of a zoning ordinance, for the simple reason that so few municipalities at that time had adopted zoning. Today, however, there are more than a thousand zoned cities, towns, and villages in the country. In view of this development, no municipality can now claim leadership simply because it happened to have one of the first zoning ordinances. Its present claims to leadership in zoning must rest, not upon mere priority in adopting the principle, but upon the far more substantial test of actual achievement, measured in terms of the attainables.

This is a high standard. It is rarely reached in a single bound; yet, every city may strive for it as a goal. But what are some of the earmarks of such a program in zoning?

### Mixed Zones

Most zoning ordinances are telescopic in their classification of different kinds of zones: the uses of the more restricted zones are successively allowed in each of the less restricted zones. In an ideal zoning ordinance, however, the uses of the several zones would be mutually exclusive: residence, business, and industry, respectively, would each be confined to its own particular zone.

Zoning implies classification and segregation of different types of buildings and uses. The mixed zone, whether a recognition of existing conditions or a deliberate method of treating present or prospective development, is to some degree an abandonment of both classification and segregation. In other words, the mixed zone is really a partial abnegation of zoning. Such a classification, unless the district to which it is applied is limited to an area at present mixed in development, is a surrender to unregulated building.

At present, the residence zones are the only zones, as a rule, protected against mixed building. In only a few instances are residence buildings excluded from industrial zones.[2] In no case are residence buildings prohibited in the business zone. Indeed, apartment houses are allowed in the business zones by nearly all municipalities, even by those which have no apartment house zone as such. Few communities have dealt as boldly with this problem as Allendale, N. J., which limits residence buildings in business zones to two-family houses.

If residence buildings were restricted to their own particular zone, there is no doubt that the present exaggerated size of business and industrial zones would shrink more nearly to the approximate needs of the community within a reasonably near future. Entirely too many owners are today anxious to be placed in one of the commercial zones, as it gives them an opportunity to gamble for a business or industrial use of their property, while in the interim they may still use it for residence purposes.

Many cities thus have missed a real opportunity to promote their well-being by not excluding residences from some, if not all, of their heavy industrial zones. This is especially true of large metropolitan communities where heavy industrial zones are large. The very reasons that make it desirable to exclude nuisances from residence districts apply with equal, if not greater, force when it comes to prohibiting the erection of new residential buildings in areas which are, in the main, to be developed with industries offensive by reason of the emission of odor, dust, gas, or noise. If it is unhealthful for pople to live near an isolated factory in a residence area, what shall we say about the isolated dwelling or tenement in a heavy industrial zone? Is it not still more unhealthful? Are not such residence buildings virtually doomed in advance to become slums? Wholesome homes cannot be maintained in an environment having its character fixed by chemical plants, slaughter houses, steel mills, tanneries, and railroad yards.

[1] By Herbert S. Swan, City Planner, New York.

[2] Newark, Milwaukee, and Hoboken exclude residence buildings from heavy industrial zones. In Newark, no change has been made in the boundaries of the heavy industrial zone as laid out in 1919. Nor has a permit been granted for any residence building in this zone since 1919.

#### Area Standards for Residence Buildings in Industrial Zones

Some communities have been woefully indifferent to the area requirements of residence buildings in industrial zones. Some of these zones are, in effect, but asylums for the worst type of dwellings and apartments, though they should, of course, be subjected to substantially the same court, yard, and open-space requirements as dwellings and apartments in corresponding residence areas within the city.

But what do we find? Residence buildings, having been admitted to industrial zones, may utilize as much ground area as the factories and warehouses themselves. Although people live and sleep in these buildings, they are not required to provide larger courts and yards than adjoining lofts that house materials and machinery.

Even where this extreme does not exist, the best we may generally expect to find is a requirement that the residence buildings in industrial zones shall observe the area requirements of the least restricted residence zone; i. e., the apartment zone. This is better than no requirement at all, but when the facts are examined it is often found dreadfully inadequate. Tenements, it is true, are unfortunately found in industrial areas; in such cases the zoning classification will have to recognize the fact and the industrial zones be opened to new apartment houses. We should not forget, however, that there are also cities in which such residence development as is found within the industrial areas is confined to one- or two-family dwellings. Here, we should surely insist upon an expression of this fact in the zoning classification, so that the industrial zone may be effectively closed to exploitation by either row houses or apartments.

#### Industrial Decentralization

Zoning has been urged so often as a means of industrial decentralization, to relieve congestion of population and traffic, that often entirely too much is expected of it. Insofar as zoning can be applied to effect this result, its operation is found to be gradual—so slow, indeed, that for a long time its results will be hardly noticeable. It is only as the old industrial areas are filled up with factories that industry, instead of growing through accretion at the expense of residential areas, will be forced through zoning into new districts set apart for it.

If zoning is to effect industrial decentralization in large cities and metropolitan areas, special care must be taken in restricting the size of industrial zones. Industrial zones should, of course, be made sufficiently large in the aggregate to care for every reasonable demand for future expansion and growth but too large industrial zones may very readily become the means of a considerable amount of congestion to both population and industry. Many cities would do well to review the size and arrangement of their industrial zones in light of their probable effect upon the prospective population pattern of the community.

#### The Buffer Zone

There are many popular misconceptions as to the proper sphere and technique of zoning. For years past, some persons have urged the use of buffer zones—a sort of transitional zone, a gradual stepping-up or stepping-down in restrictions so as to make the passage from one zone to another as easy as possible. According to the theory of buffer zoning, a one-family-house district should never be placed alongside an industrial zone; some kind of a neutral zone should be placed between the two. It might be a business zone, an apartment-house zone, a row-house zone, or even a two-family-house zone; but some sort of intermediate zone should be sandwiched in between a one-family-house and an industrial zone.

Nobody would deny the occasion for or the usefulness of the buffer zone. To use a buffer zone where conditions demand it, however, is quite different from using it indiscriminately. Zoning is anything but academic; attempts to reduce it to cut and dried formulae are foredoomed to failure. In no case is this more true than with the empiric use of buffer zones. A buffer area, as a sort of neutral zone, is open to the objection that it neither permits owners to do what they should be allowed to do nor denies them the privilege of doing what they should not be allowed to do; the regulation is neither constructive nor restrictive, but a compromise with one's ideas of right and expediency. At best, a buffer zone is a straddle between what a district should and should not be.

The buffer zone, when sandwiched between different zones for the purpose of making the gradation between them easy, really solves no problem; on the other hand, it creates new problems. Once the principle of buffer zoning is admitted, how many buffer zones are we to have? Are we to have buffer zones to buffer zones? The buffer zone should presumably be laid out at the expense of the area otherwise included within the more restricted zone. In that case, buffer zones might invade the appropriate areas of the more restricted zones; indeed, some of the more restricted zones would, no doubt, be swallowed up by the buffers. In a very real sense buffer zones are a denial of proper zoning to the areas included within them.

#### The Self-Contained Community

Another misconception, too generally held, is that of the self-contained community. Nobody would dispute the fact that an all-inclusive city performing the functions of a complete urban unit should possess such an assortment of zones that an outlet would be provided

for every necessity of the community. To extend this idea, however, to a residence suburb, an integral part of a metropolitan area, is carrying it to an absurd length. To hold that such a municipality cannot reasonably adopt the regulations that would be applied to it if it were a precinct of the parent city is clearly untenable. Such a municipality may, as a matter of necessity, have to operate an incinerator, but to make provision for a utility of this character is a different matter from creating a full-fledged industrial zone.

The same reasoning applies to business and apartment house zones. Why should a suburb, because it is an independent municipality, be less able to protect its homes against stores and multifamily dwellings than if it were part of the neighboring city? On the contrary, a suburban community, being less complex in organization, should be better able to interpret the needs of its citizens than a large city. At any rate, the demand for zoning to protect a community has nothing to do with the governmental affiliations of that community; a store or an apartment house will be as injurious to a one-family-house neighborhood whether it is in a metropolis or in small suburb.

The theory relative to the self-contained community is of the same species as that used to justify the buffer zone; to apply either without regard for the requirements of the community is a denial of proper zoning to property owners.

#### Control of Institutional Uses

That residence areas almost universally require churches, schools, libraries, and other social organizations for their well-being is today a quite generally accepted fact. Such uses may occasionally inflict injury upon adjoining residences, but they are so essential to maintenance of the community that undesirable features accompanying them are tolerated, even in the most restrictive ordinance. In some instances, the location of these uses is subjected to review by the board of appeals, but even this control is absent in most ordinances.

A different situation, however, applies in the case of certain institutions. We may admit, for instance, that accidents, sudden attacks of illness, and emergency cases all make a community hospital desirable in almost every municipality. The regulations should usually be drawn, therefore, so as to permit such a use under proper restrictions in a residence zone. To force such a use into a business or industrial zone would be both inappropriate and unreasonable.

What shall we say, however, of the large hospital or other institution that the metropolis desires to locate in the small suburb 20 miles away? Does the suburb have to leave its zoning regulations so wide open that a neighboring community may, at will and as a matter of right, exploit the amenities of its residence zones with hospitals for mental disorders, sanitariums for tuberculosis, orphanages, reformatories, and houses of refuge? That a community should make appropriate provisions for its own sick and unfortunate may be accepted as eminently fair. Few communities refuse to act thus today, but they bristle with indignation when they are called upon to accommodate, in addition to their own, the unfortunates of neighboring cities.

It may be asked why they should decline to welcome the charities of other communities, when it involves no cost to them. The answer is that these outside institutions are usually structures occupying considerable land—sometimes 40, 50, 100 acres. The loss of taxes on such large areas approaches, in itself, a financial calamity to small communities. When three or four of these institutions invade a struggling village, it is nothing short of a tragedy; and the problem is more than a financial one to the suburban home owner.

Large tracts held in a single parcel, acquired before adjoining holdings are subdivided, make it difficult to plan the community in a rational manner. Frequently, it is impossible to lay out the land back of such institutions for residential purposes. Very often they interfere with traffic to and from focal points in the community—the commuter station, the school, the shops, the fire house. Such institutions have virtually bisected some suburbs, so that what would logically be but one community has had to be developed as two.

Then there is the outstanding objection to such institutions that cannot be overlooked; they paralyze the growth of the community. No good residential development can survive a lunatic asylum or a reformatory. Most home owners fear such institutions more than they do stores or apartment houses. "What is zoning good for," they ask, "if we cannot protect ourselves against such uses?" And here the matter rests. At the present time, the controversy is being fought out on a dozen fronts. Insofar as the courts are concerned, the honors have until now been divided about equally between the two sides. Which will emerge the victor in the end, only time can tell.

#### Altering Large One-Family Dwellings

The large one-family house built years ago, when standards were simpler and servants cheaper than today, constitutes an acute problem in the administration of many ordinances. If zoned in a one-family zone, such a building may not be altered into a two- or three-family apartment; it must be occupied by a single family and yet, because of the social changes which have occurred during the past generation, it has practically no value as a one-family house. If at all rentable, it can, because of its obsolete character, be rented only as a rooming house, a use which not only produces a

small income to the owner but prejudices the amenities of the up-to-date one-family dwellings in the neighborhood. Because they may wish to change such buildings into flats and small apartments, the owners as a rule prefer to be placed in an apartment house zone. Such zoning may permit them, whenever they decide to demolish their present building, to erect a five- or six-story apartment house. Lots at present vacant in these areas may, moreover, be immediately improved with multifamily houses. Such developments, needless to say, embarrass the newer one-family houses in the neighborhood more seriously than alterations which would change these mansions; without enlargements or external changes, into small apartments. In one case, the entire district is gradually changed into an out-and-out apartment house neighborhood, inflicting premature depreciation and obsolescence upon all one-family houses. In the other case, these large houses are altered to accommodate two or three families, as their size permits, and to yield an increase in rents to the owner; but the one-family character and appearance of the district are preserved, since new apartment houses crowding the lot, erected to a great height and housing a considerable number of families, are excluded.

Cities like Durham, N. C., and Johnstown, N. Y., probably have solved this problem as satisfactorily as it is possible to solve it. Though including such buildings in the one-family zone, both cities authorize the board of adjustment, after the usual hearings, to permit the alteration of these buildings into small apartments, provided the building is not enlarged and maintains its original external appearance. Such a regulation does justice to owners of these buildings and is at the same time a constructive factor in sustaining the value of the modern one-family dwellings in the vinicity.

#### Inappropriate Apartment House Zones

Real estate owners frequently urge the inclusion of the frontage on some major traffic street in an apartment zone, on the ground that the property is unfit for private home development. They insist that traffic is such as to deprive the property of all demand for dwellings. The argument is a spurious one, for it implies that property that is unfit for one-family purposes is fit for multifamily purposes. Nothing could be more contradictory; yet this argument carries weight with planning boards and councils. As a consequence, one finds multifamily districts on many traffic arteries of different cities, not because there is need for such development but because owners of property feel they can dispose of their holdings for apartment house purposes at a greater price; and yet, every apartment zone of this character is, by their own admission, unfit for residential purposes.

The treatment of main traffic arteries presents a difficult problem in every community. There is considerable truth in the claim that such arteries are not desirable for one-family house developments; yet there are communities where the inclusion of main traffic arteries in multifamily house zones would make these zones entirely too large for such legitimate demand as may exist for apartments. The problem, instead of being solved by an apartment house regulation, is really made worse through an inappropriate effort at solution. The real difficulty lies in the planning of main traffic arteries. With the ordinary rectangular street plan, traffic is permitted to invade localities from which all but local traffic should be excluded. Eliminating through traffic from residence streets would go a long way toward remedying some of the evils to which dwelling districts are subject. Another method of attack would be to secure an exceptionally deep set-back of buildings on the lot, so that ample front yards would aid in excluding the objectionable influences of traffic from dwellings.

The areas set aside for different zones should always bear a direct relationship to the prospective requirements, within a reasonable future, of such developments. To ignore this principle is, in effect, to abandon the basic principles of zoning and to lay out mixed districts. Even though these areas are zoned for apartment purposes, the greater proportion of the area will be used for small homes. If the area were zoned for small homes, instead of for a mixed development, these homes would have more protection than is now the case.

#### Nonconforming Buildings and Uses

There are two problems in zoning—one, the control of new land uses and buildings; the other, the control of existing land uses and buildings. It would be exceedingly difficult, if not impossible—and, at any rate, most inequitable—to treat existing buildings that do not conform to the ordinance in the same manner as those that do. Every existing building devoted to any use, no matter where it is situated, has acquired vested rights with which a zoning ordinance should ordinarily not interfere. When, however, the existing use is discontinued and it is proposed to adapt the building to a new use, or when it is proposed to extend the nonconforming use, to enlarge the nonconforming building, or to reconstruct a nonconforming building, the change should, in justice, be reviewed by an impartial body so that the rights of adjoining owners will not be violated and something more injurious to them than the present use imposed upon the neighborhood. It is for such purposes, among others, that a board of appeals is established. This board is not formed to evade the settlement of these questions. In the nature of the

case, these questions cannot be settled at the time zoning is put into effect.

Suppose there were no regulations affecting nonconforming buildings or uses. Assume that every sporadic store were made a business zone and every isolated factory an industrial zone. Then the community would have surrendered every hope of ever reclaiming these small scattered areas for their proper use. Every use of this character could be extended whenever the owner chose; new uses could be introduced and established; what is at present a temporary use of property could be permanently established in the neighborhood. In other words, a small nonconforming use would be invested with all the privileges and immunities of a building located in its proper zone. The owners of the plots upon which such buildings stand could construct buildings more injurious than those there at present and by such threat, hold back development of the locality.

In the course of time, the provisions relating to nonconforming buildings may, if properly drafted, go a long way toward righting the wrongs suffered by different neighborhoods from unregulated buildings. The consequence of compelling nonconforming buildings, with changes in use, to be as far as possible in conformity with the regulations of the zone in which they are located will ultimately be to "weed out" sporadic uses which now afflict different localities. The heroic way to treat nonconforming buildings is to expel them bodily from restricted zones. This would solve the problem at one stroke, but it might be unjust to the owner of a nonconforming building. Even here, however, some hope of improvement may be held out to injured neighborhoods. A number of zoning ordinances have insisted upon the cessation and abandonment of nonconforming uses after a fixed date—and what is more to the point, the courts in some cases have supported the validity of these ordinances.

An ever-growing group of cities provides that if any nonconforming use is discontinued for a period of a year or more, the property shall thereafter be used in strict conformity with the ordinance. Each city must decide how far it should go in retroactive regulations. In some instances, such regulations are no doubt desirable and should be applied; but as a general proposition regulations designed to prevent an increase in the offensiveness of nonconforming uses will in the end achieve the same result as initial banishment, and with little hardship to owners.

Certainly, the nonconforming building must be controlled; to fail to limit the extent to which it may be structurally altered or the manner in which it may have its use changed, as many cities do today, is to entrench it permanently in its present location, to the lasting injury of neighboring property.

#### Zoning as a Means of Protecting Water Fronts

Communities bordering upon or containing bodies of water have for years been barred from the best public use of their water fronts by the erection of buildings extending over the water. In some cases, projections have been amusement piers extending hundreds of feet into the ocean; in other cases, they have been restaurants, dance halls, and even dwellings, erected in part, if not entirely, beyond the high-water mark. When erected over the beds of creeks and rivers, buildings have quite commonly obstructed the stream flow and thus aggravated danger from floods. Wherever built, not only are such structures unsightly, but they cut off the view of and the access to the water. Quite as important as any of these considerations is the fact that they break the continuity of the open space between the high- and low-water marks so that the public, where it is not actually denied the use of the beach front, is at least inconvenienced in using it.

Atlantic City, in attacking this problem, inserted a provision in its ordinance to prohibit new buildings oceanward of the boardwalk except for one-story, unenclosed pavilions or piers not exceeding 40 feet in height above the level of the boardwalk. Existing buildings oceanward of the boardwalk may not be materially altered without the approval of the board of adjustment. Such alterations, however, may not increase the height of the structure at the time the ordinance was passed. The chief purpose of these provisions is to maintain the open ocean view of the high hotels fronting upon the boardwalk as well as to preserve the continuity of an open shore front.

Milford, Conn., prohibits all buildings other than piers and boathouses within a distance of 20 feet of the high-water mark along Long Island Sound and its tidal inlets. The neighboring town of West Haven has incorporated a similar provision into its ordinance, except that, in addition to piers and boathouses, warehouses and factories may be built out to the water only within a limited area. In both towns, moreover, boathouses and piers are allowed only in residence zones and may, therefore, not be used for business purposes. The practical effect of these provisions is to reserve the foreshore along the water in residence zones for public purposes.

Although these regulations do not prevent the use of the water front for purposes of navigation, they do prevent an improper development of shore property; they keep down the height of structures erected upon the beach; they also prevent buildings which, because of the large number of persons frequenting them, would

be especially hazardous to the public safety from being erected over the water. The elimination of buildings in and over the water, moreover, secures to the public an uninterrupted and unobstructed water front.

#### Summer Shacks

Many communities, especially those on the fringe of large metropolitan areas, have experienced difficulty in maintaining a proper balance in their residence development between the claims of summer residents for cheap vacation quarters and the claims of year-'round residents for substantial, well-built houses. Some suburbs on the outer edge of a large urban community have been well-nigh ruined by flimsy houses, often little more than shacks, built to accommodate the summer camping needs of the population in the city. Unplastered, without cellar or heating plant, often with the barest toilet conveniences, ill-built and constructed often of second-hand materials, firetraps—these buildings constitute a positive blight to the better residential development of many an otherwise attractive and promising country suburb. This is particularly true if the suburb possesses features of natural charm, such as a sparkling brook, a wooded glen, or picturesque hills and mountains.

These communities confront a difficult problem, one which no community seems to have met successfully. Many insist upon a minimum lot area per house. This helps, since it tends, through increasing the land area required, to make the construction of a house so expensive that it becomes uneconomic, considering the investment in land, to erect a mere shack. Others, as in the case of Harding, N. J., have insisted that houses designed for human habitation shall be plastered as well as placed upon solid foundations. Here the attempt is, in a measure at least, to control the cost of the house. By laying down the minimum standard of construction which new buildings must attain, the ordinance tends to exclude from the community inferior buildings.

Permanent, year-'round communities do not have the same problems as summer colonies. The social, health, and safety requirements of each are quite different. It is only natural that each should try to surround itself with such regulations as will protect its own particular type of development. Considerable experiment and development along these lines may be expected in future zoning ordinances.

#### Private Parking Spaces

Many uses permitted in residence zones, such as restaurants, clubs, and hotels, demand considerable parking space. When the needed space is not provided on their own grounds, cars at peak hours are parked on both sides of the street, not only in front of but several blocks away from the premises. As a result, neighboring residents are frequently denied the privilege of parking in front of their own homes; and sometimes, because of cars parked across driveways, they are even denied ingress to and egress from their own garages.

On narrow, secondary residence streets, such a congestion of parked cars creates a real traffic hazard. The constant noise and confusion and, at night, the glare of arriving and departing cars not only detracts from the usual peace accompanying a normal surburban life; they may even convert it into such a hideous nightmare as to plunge a sensitive person into a state bordering upon chronic psychosis.

To get at this evil, certain communities like Hastings-on-Hudson, for instance, provide that a restaurant situated in a residence zone must provide a parking space on its premises with accommodations equal to one car for every four table seats in the dining room. Such a provision protects the traffic rights of the general public to its streets; it enables the guests of neighboring residents to park at the curb; it keeps driveway entrances open to arriving and departing cars. Moreover, it throws the burden of parking the automobiles of guests of the hotel and restaurant directly upon those who profit by their patronage, the owners of the particular business. That the provision of such a parking space is not altogether a burden is evidenced by the fact that many stores, theatres, offices, and hotels located in business zones even now provide parking spaces upon their own premises for clients because of the added trade such facilities attract. From every angle, the provision is so just and reasonable that in the future it will no doubt be incorporated in many additional ordinances.

#### Articulation of Zoning and Planning

There are few communities which have coordinated their city plan with their zoning in such a way that changes from one zone to another must be accompanied by definite adaptations in the city plan to meet the new zoning use; yet who would say that the physical plan designed to serve a multifamily or business or industrial district is not different from that which will satisfactorily serve a one-family house district? The ease of change from one zone to another stimulates petitions on the part of owners for unwarranted changes in zones. Were the owners of an area who desired to have their property changed, from, say, a one-family zone into an apartment zone, obliged to dedicate a portion of their lots for wider streets and another portion for playground facilities, they would probably in most instances prefer to retain the original zoning designation. Their hope, of course, is to shift the cost of providing these facilities to the community at large. They have never thought of paying for such changes in the plan of the community as their desired changes in the zoning regulations, will, in time, make necessary. Anything which

will serve to bring these facts home to the city council itself, no less than to the property owner, will aid in bringing about a greater permanence in the zoning regulations.

## The Open Space Requirements [3]

Probably few persons appreciate what a profound change has been brought about in the development of cities within a comparatively few years through zoning. Some cities, it is true, prior to zoning had passed fairly satisfactory building codes, but in nearly every case these related solely to materials and methods used in construction of buildings. They seldom concerned themselves with requirements as to open spaces about dwellings, and when they did, they were, practically without exception, utterly inadequate. Such effective regulations as were imposed with reference to residence buildings were usually to be found in housing codes passed by the legislature for some or all of the cities of the State. Generally confined to multifamily dwellings, these regulations made no provision for open spaces about one- and two-family dwellings, in which the great majority of the population resided. Most cities had no control over open space about residence buildings, whether dwellings or apartments.

### Ban on Dark Rooms

The social harvest of such lack of control was dark rooms, land overcrowding, congestion of population, rear dwellings, blighted areas, and constant shifting of residence centers. So long as no standards were legally established for dwellings, such standards as owners voluntarily sought to observe were continually infringed upon by unthinking persons.

This state of affairs has been completely altered by the cities that have adopted zoning ordinances with satisfactory area regulations. In these cities, every room in which people sleep, work, or congregate must now have windows, equal to at least one-eighth of the floor surface, opening upon either a street or a legal-sized open space. Rooms without windows and rooms with windows looking out upon air-shafts are today a thing of the past. Cities are at last beginning to discover that sunlight, fresh air, and ventilation, though among God's freest gifts, are also among the most priceless in their beneficial effect on physical and mental health.

In some instances, the standards of open space set by the more progressive developments are outstripping those established under even the most advanced zoning ordinances. Thus, an increasing number of apartments are being built only two rooms deep, every room facing either upon the street or the rear yard, neither inner nor outer courts being employed. Some developments, moreover, cover only 50 percent of the ground, as against the 60 to 70 percent allowed by local zoning regulations. The most gratifying feature about these undertakings is the owners' insistence that they are more profitable than the larger houses permitted under the law would have been.

That private individuals should, on their own initiative, as a means of earning larger returns on their capital, entirely forego using less desirable kinds of open areas as well as the maximum percentage of lot area permitted by law, is an evidence, if evidence were wanted, of the uneconomic effects of land-overcrowding.

Buildings cannot steal light and air from neighboring properties without running the risk of themselves falling victims to their own theft; in due time, adjacent buildings, built as high and covering as much ground as themselves, may darken their own windows. Increasing recognition of this fact is responsible for the progressive improvement in the area regulations of zoning ordinances.

### Inner Courts

Every unobstructed inner court, regardless of shape so long as it is of a given area, receives precisely the same amount of daylight. The quantity of light admitted into a court is determined, not by its shape, but by the area of opening to the sky. Wherever the area exposed to the sky is the same, the flux of direct daylight (and of sunlight, too) into the court is identically the same.

Circular, triangular, trapezoidal, and rectangular courts receive one and all exactly the same flux, provided only they expose the same open area to the sky; yet the intensity of illumination varies at different points within the several types of courts within broad limits. This is true even where the several courts are of a like height. Should the height be increased, the intensity would vary within broader limits.

The reason for this variation is found in the fact that certain shapes admit of more effective utilization of the light flux than others. Certain courts may at certain points on a given level receive an abundance of daylight and yet at other points on the same level obtain only a fraction of that amount. This is the case, for instance, with triangular courts which receive maximum light at the middle of each wall and a minimum at the corners. A circular court receives, on the other hand, at any particular level the very same quantity of direct light at every point around the whole circumference. A polygonal court makes only a little less satisfactory use of its direct illumination when it

[3] The sections in this chapter on daylight illumination are taken from a book manuscript (in process of final completion), entitled *The Natural Illumination of Buildings*, by Herbert S. Swan and George W. Tuttle.

comes to rectangular courts, the square court makes, par excellence, the most effective use of its light. As a rectangular court departs from a square shape and assumes a more and more elongated shape, the intensity of illumination increases on the two end walls at the same time that it diminishes on the two side walls. The two end walls, it should be remembered, embrace a steadily diminishing proportion of the total lineal wall area as the oblong shape becomes more pronounced. A square court is, as a consequence, by far the more desirable court.

All too often the fact is ignored that it is the court with the smallest perimeter enclosing a given area that receives the maximum average illumination on every point of its surface. Some zoning ordinances contain mandatory requirements which actually prohibit a builder from utilizing an inner court of the most desirable shape. Thus, the Spokane ordinance compels the provision of a court with a length one and one-half times its width. A square court which would utilize the daylight flux more effectively is prohibited by the positive requirements of the ordinance.

Increasing the height of a court involves a more intensive exploitation of a given flux of direct light. The quantity of daylight entering the top of the court remains constant, but the depth of the court is doubled, or perhaps trebled, with the consequence that though there is no diminution in the value of the daylight at the top of the court, a very great decrease takes place in the illumination of the bottom portion.

The quantity of daylight entering a high court is exactly the same as that entering a low court of like area. The distribution of light on the walls is also the same at every point in the two courts for the full height of the low court. Since this is so, where does the daylight that illuminates the lower portion of the walls of the high court come from? Such daylight, just like that illuminating the upper portion of the walls, comes, of course, through the top of the court; but the daylight illuminating the lower portion of the four walls, as well as the bottom, in the higher court, illuminates only the bottom of the lower court. In a square court having a depth equal to its width, the superficial area of the four walls is four times that of the bottom. In a square court having a depth equal to twice its width, the superficial area of the four walls is eight times that of the bottom. The daylight, which in the lower court serves but one horizontal unit of area, must in the higher court serve four vertical units in addition to the one horizontal unit of area. The degree to which the light must be "thinned out," as it were, in order to serve this greatly increased area is indicated in the data below which shows the daylight illumination at different points in the two courts.

| | On end of each wall at bottom | On middle of each wall at bottom | On bottom each corner | On bottom at middle of side | On bottom at center of bottom | Average on bottom |
|---|---|---|---|---|---|---|
| Low court | 11.14 | 14.23 | 27.69 | 36.07 | 47.19 | 36.75 |
| High court | 2.78 | 3.06 | 17.80 | 13.23 | 14.69 | 14.73 |

From the above data, it appears that the average direct daylight on the bottom of a square court is diminished almost two-thirds by increasing its height from one to two times its width. Every unit of light sacrificed by the bottom goes to illuminate the increased wall surface of the higher court; the light sacrificed by the bottom is the only direct light received by the additional wall surface in the higher court.

The area of an inner square court must be quadrupled each time its height is doubled in order to maintain the same standard of daylight illumination at its least illuminated point. Each time the area of the court is increased fourfold, its volume is increased eightfold. The result is that the area of court facade divided by the volume within the court doubles each time the height of the building is doubled. This fact in itself explains the unsatisfactory light conditions almost universally prevalent in inner courts; considering the typical lot unit in its relation to the average development, their use constitutes such an extravagant use of land as to render an appropriate size practically prohibitive.

This disability of the inner court is inherent in its character. Being a self-contained court, it derives no light from neighboring open spaces. On the other hand, it contributes no light to the common fund of light in the community; such light as it receives it keeps entirely to itself. It not only "hogs" its own light, but such open space as it provides for its own illumination, in increasing the outside dimensions of the building, actually increases its obstructive effect upon other buildings. In contrast to the inner court, the front yard, the side yard, the rear yard, and the outer court all to a greater or less degree complement and supplement other open spaces. As a result, they purchase their light more cheaply than does the inner court. They are, therefore, better suited to provide the requisite light for buildings, especially high buildings.

#### Set-backs in Courts

A considerable number of cities have attempted, through zoning, to encourage the use of set-backs as a remedy for the defects inherent in inner courts. Through a recession of the walls in the upper portion of the court it has been thought that a minimum standard of illumination might be maintained at the bottom of the court at the same time that an appreciable saving might be effected in the cubage of the court. Increased light can, of course, be obtained for the lower stories of a

court through the application of set-backs to the upper portions of its perimeter, provided the set-backs are made uniform on all four sides around the court. Where the set-backs are, however, not uniform on all four sides, or are omitted on one or more sides, the effect is reflected in diminished illumination on the opposite side or sides of the court.

That a set-back court is more economical of space in providing a required amount of light at the least illuminated point than a vertical court is illusory, for the area of the ordinary inner court with vertical walls is quadrupled with each doubling of height, the ratio of height to width being constant. There is not only no deviation from this principle in the set-back court, but due to the fact that most of the increased space resulting from the set-backs is so situated that it is ineffective in augmenting the light at the least illuminated point, the set-back court always requires a larger cubage than a vertical court in order to provide a required quantity of light at the bottom of each facade. The substantial amount of this increased volume is indicated by the fact that it comprises usually from 25 to 33 percent of the space embraced in the vertical court. No matter what the set-back ratio or the height of buildings, the set-back court is always more extravagant of space than the ordinary vertical court with uniform dimensions from top to bottom. Considering the least favored point in the court, the vertical court is always the more economical court; it invariably admits either the same amount of light with less volume or a greater amount of light with the same volume of open space. This disability of the set-back court, however, is limited to that portion of its elevation within its first set-back plane. Above that level, although a portion of the set-back volume is still ineffective in admitting illumination to different portions of the court, the part of the set-back volume that is ineffective diminishes with each successive set-back above the ground until the topmost set-back is reached. There, the entire court provides illumination for every point in that set-back plane. Every portion of a set-back court above the first set-back, therefore, receives more illumination than the corresponding portions of a vertical court having the same ratio of height to width.

Unlike the set-back court, the vertical court does not sacrifice the light of the lower floors where it is most needed for the sake of increasing the bulk of the building near the ground. The vertical court makes, volume for volume, the best provision for the least illuminated point. As a rule, the court that does this is the preferable court since, if we take proper care of the least illuminated point, the other points will take care of themselves. Nor should the fact be overlooked that the character of the set-back court is such that it tends to produce excessively deep rooms in the lower floors. To keep the volume of the court within bounds there is, moreover, the temptation to skimp on the setback ratio. One well-known city has, for example, in its most liberal zone, a set-back ratio of 1 to 24 for its inner courts. Such a set-back requirement constitutes, in plain language, a crime against the proper illumination of buildings. Wherever used, the unfortunate aspect of set-back courts is the emphasis laid upon the greatest possible economy of space rather than upon the most desirable illumination of buildings.

#### Minimum Window Areas

We know so little about the laws of natural illumination that we are unable to say what is a good court or a bad court, what is a proper or improper limitation of the height of buildings or what is the comparative daylighting value of a window when facing upon different kinds of open spaces. The cause of good building, especially in the field of natural illumination, has suffered irreparable loss through general lack of knowledge in these matters. Such facts as we have possessed on the subject have been so enwrapped in mathematical technicalities as to be practically valueless not only to the layman, but also to the architect and the city planner. This is probably why there is today not a single zoning ordinance that is based upon a scientific appreciation of the laws of natural illumination. The formulation of such an ordinance awaits the laying down of the ground work for a science of natural illumination which will enable us, within the physical limitations of the subject itself, to exercise as much control in utilizing sunshine, daylight, and reflection to secure predetermined results in the use of natural illumination as we now possess in the use of artificial illumination.

This means that we need data which will give us accurate information, not only relative to the daylight flux entering enclosures, whether streets, inner courts, outer courts, side yards, or rear yards, but also to the actual illumination at different points within these enclosures. It means more than this: we must also have data which will give us the daylight flux entering any window opening upon each of these spaces, whether situated at one level or another down from the top of the enclosure, as well as the illumination obtained through a window at any point within a room.

A window should be considered, not as so many square feet of a building facade, but as a source of valuable natural illumination. Today, windows are quite generally distributed through buildings in an arbitrary manner without due consideration to their illuminating value, with the result that many rooms are almost physically dark from the moment they are built. Yet, with proper treatment, windows may

within limits be utilized so as to afford a definite illumination at different points within rooms in the same manner as artificial sources of illumination. To do this demands a more efficient use of glass than is now the case in buildings.

Let us consider windows as parts of a building free from obstructing buildings. The daylight illumination admitted under such an instance depends upon the size of the several windows, whether the window area is all in one window, or divided among several windows, and the thickness of the building wall in which the window or windows are set. The distribution of the illumination within the room depends, in turn, upon the spacing of the windows and the height of the top of the window. In built-up communities, most windows are, of course, to a greater or less degree obstructed by neighboring buildings: the windows either face a built-up street or look out upon some kind of open space, a side yard, a rear yard, an inner or outer court. In no instance can a window admit more light into a room than the flux incident upon that portion of the building facade occupied by it. This varies for each type and size of open space utilized by a particular window. The position of a window within a room is also of considerable importance to its illuminating value. A central location at one end of the room midway between the two side walls gives an entirely different result from a location at either corner of the room. Two windows at one corner of a room, though they admit the same daylight flux as either two windows spread or grouped within the same wall, or as two windows in opposite walls of the room, nevertheless produce a very different distribution of illumination within the room.

Various zoning ordinances require a minimum window area proportioned to the floor area of rooms. An increasing number of ordinances fix the window area at one-eighth of the floor area. Although this requirement is a step in the right direction, it obviously is a rough rule-of-thumb used to accomplish results which should be attained with more precision. Window areas should, if used as sources of illumination, be based upon the daylight flux required to afford a minimum illumination in room interiors. The application of such a standard requires mastery of a technique in the utilization of natural illumination which is today not available to architects or planners.

**Limitation Upon Percentage of Lot Occupied**

In restricting bulk, a large number of cities have relied exclusively upon height limits and court and yard provisions. So long as a building conforms to these general requirements, it may occupy any proportion of the lot area the owner chooses to build upon. Indeed, the only limitation preventing buildings from covering the entire lot is the requirement in some cases as to yards—a side yard on either side of the building and a rear yard back of the building. The result is that even in the best one-family detached house districts of these cities, now used by buildings occupying 20 to 25 percent of the lot area, new buildings may cover from 50 to 70 percent of the land.

Are our best residence districts entitled to no more protection than is afforded by such regulations? The suburban character of a neighborhood, it is safe to assert, can never be maintained if buildings are to cover from one-half to three-quarters of the land. Requiring an open space of 8 or 12 feet in width between buildings is not in itself sufficient to maintain the amenities of one-family or two-family detached house districts. Additional space must be kept open, else the only assured distinction between tenement districts and home districts will be in the heights of buildings and the kind—not the amount of open space surrounding structures. Far from superfluous, the provision limiting the proportions of lot areas which buildings may occupy is one of the most useful in a zoning ordinance. It affords additional light and air; it promotes family privacy; it encourages the maintenance of lawns with grass and trees; it provides children with additional play spaces off dangerous traffic streets; and it segregates homogeneous types of buildings.

A considerable number of zoning ordinances are fairly adequate in the proportion of open space demanded in one-family districts. Many of even our best zoning ordinances are, however, altogether too liberal in their coverage provisions relating to commercial zones.

The reason is not far to seek. The chief difficulty lies in the fact that practically all architects, builders, and real-estate owners inadequately understand the subject of natural illumination. Few persons seem to realize that, given a fixed height, the sunlight and daylight illumination incident upon the walls of buildings and the ground level between buildings is a function of the unbuilt open space left open to the sky. In other words, comparable buildings, possessing a given height, and situated upon like lots, will have their walls and the ground about them illuminated, on the average, in proportion to the amount of space left open to the sky. Suppose we have two different types of development of a given height, one covering 80 percent of the lot area, the other, 40 percent of the lot area. Since the latter development has 3 square feet of open space to every square foot of open space in the former, there must obviously also be thrice the daylight flux entering through the open unobstructed top of its various courts and yards. Too

large a roof area is often the causes of the darkened windows in a building. Thousands of buildings occupy a disproportionately large part of the lot area and as a consequence so reduce the daylight flux entering their courts and yards as to render nearly all their floor space untenable for daylight use because of poor illumination. Buildings must have roofs, but we should not forget that the sunlight and daylight incident upon the roof never enter a vertical window, not even one on the top floor.

Provisions limiting the percentage of lots which buildings may occupy in the different zones should be incorporated into all ordinances dealing with this subject.

#### Location of Accessory Buildings

In years gone by, owners in most cities have been free to erect accessory buildings on any part of the plot they might choose. If they elected to construct their garages, stables, woodsheds, or hen coops on the front of the lot and their dwelling upon the rear of the lot, that was their privilege, irrespective of the injury that such a structure would most certainly inflict upon their own or adjoining property.

Such evils are to an increasing extent being remedied by cities through regulating the location of the accessory building upon the lot. As a rule, no accessory building may be erected upon the front half of an interior lot. No accessory building may be located within 5 or 10 feet of its rear line when such forms part of the front half of another lot's side line. A common rule in the case of corner lots fronting upon two streets is to require accessory buildings to be located upon the interior quarter of the lot—removed from all streets. Regulations like these cover every conceivable situation. However, the regulations are waived where the accessory is incorporated as an integral part of and is enclosed by the same enclosing walls as the building to which it is accessory. In that case, the accessory may be built anywhere on the lot the owner chooses.

The complete absence in the past of any regulations controlling the location of accessory buildings upon the lot has resulted in many owners exercising comparatively little or no foresight in the development of their plots. Accessory garages on the front of the lot with the roofs projecting several feet above the porch level of the house in back of them, garages crowding the rear lot line up against residences or apartments on the adjoining butt lot, accessory buildings too near the principal building or jammed in between the principal building and the lot line so as to cut off through ventilation between rear yard and street, and accessory buildings occupying a disproportionate amount of the lot area—all of these abuses demonstrate the need of doing something to keep the accessory building within proper bounds.

#### Limitation Upon Congestion of Population

Fortunately for most cities outside of large metropolitan centers, few builders have vied with each other to see who could pack the most people upon a lot. The proper time to prevent undue congestion is before it becomes either intense or widespread. Many cities have failed to recognize this important fact in their ordinances. As a result, their apartment zones are open to an unlimited overcrowding of land.

The fact that a large part of a city's population resides either in private homes or small multifamily houses constitutes one of its chief social advantages. Every family residing in a small home is provided with more light, air, and ventilation than one residing in a large tenement. This makes for a healthier and more efficient community. Health is something more than a negative factor; it means the enjoyment of unimpaired vitality and strength. Scientists agree that individuals living in an abundance of sunlight and daylight have more resistance to the onslaught of disease than those who live in dark rooms.

As a matter of mere construction, large multifamily houses can be built and equipped with adequate open space for light and air. An apartment house can be just as healthful as a one-family house, but the fact remains that economic factors encouraging the construction of multifamily houses operate in such a manner that multifamily houses are almost invariably equipped with less open space and ventilation than are smaller residences.

The overdevelopment of a small percentage of a city's area may result in the enrichment of a few owners through their capitalization of congestion. Because the building on one lot houses 50 families, however, it does not follow that all vacant plots in the neighborhood can be so developed. The contrary is more apt to be true. The fact that a 50-family house has been built where only a 2-family house should have been erected has the effect of leaving 24 lots vacant, when they might otherwise have been improved, and of holding in abeyance the effective demand for them until the increased population again warrants the erection of a large multifamily house.

The relatively small amount of open space per family provided in extreme cases of land overcrowding has not received the consideration in the past that it deserves. Compare the vacant ground per family in a 6-story walk-up, housing 30 families and occupying 70 percent of the lot, with that in a 1-family house occupying but 25 percent of the lot, both on lots 50 by 100 feet. In the latter, there are 3,750 square feet of

vacant space per family; in the former, only 50. In other words, the family living in the private house has 75 times as much open space, on the average, as each of the 30 families residing in the tenement. Facts like these are in themselves sufficient to explain why children in 1-family-house zones play on the lot, while those in multifamily-house zones play in streets.

How to avoid or control congestion is as important and difficult a problem as any that confronts cities today. Height regulations afford no satisfactory solution of the question, for even though height limits be as low as it is practicable to impose, large numbers of families can be housed in low buildings. Nor will area regulations get to the bottom of the matter, for court and yard requirements will admit of the construction of a 50-family house as readily as of a 3-family house. To prevent undue congestion, it is necessary to go beyond the imposition of height and area regulations. Experience shows that, in the absence of restriction on density there is no limit to the population that can and will be housed on a unit of ground. In many cities, the new tenements erected under zoning accommodate a larger number of persons on a given land area than the old slum houses in the most congested part of the community.

How, therefore, is congestion of population to be limited? In the opinion of a large number of persons, the English Town Planning Act of 1909, by limiting the number of families that might be housed to the acre, pointed out the correct method. The first city in this country to introduce this method of direct limitation upon congestion was Newark, N. J., in 1919. Now, a great number of municipalities limit their maximum density of population on this basis. Some cities have preferred to express the limitation in terms of a minimum number of square feet of lot area for each family housed, instead of so many families per acre. Whether the limitation be expressed one way or the other makes no difference; the main consideration is not the method but the limitation. Really to safeguard a community against bad housing conditions and overcrowding in the future, however, a direct restriction should be placed upon the number of families that may be housed on a unit of land area in all zones, whether residence, business, or industrial.

#### Garden Apartments

Many suburban communities are awakening to the fact that there is no need to restrict multifamily housing to a limited number of highly congested tenements or apartment houses in the heart of the city. Multifamily houses, if built on large plots, may be constructed in a manner to afford the advantages of central heating, elevators, janitorial services, etc., at the same time that they are equipped with such amenities as porches, sun parlors, spacious lawns, attractive gardens, playgrounds for children, and a parking area for the machines of tenants.

Built thus, an apartment ceases to be a parasitic building, obtaining a disproportionate amount of its light and air from neighboring property, congesting streets with parked cars, and pouring its child population onto the sidewalks for play. Not only does it bear its burdens as a building in the community; it may even provide an enviable standard of life to a considerable group with ideals identical to those of the one-family residents in the community but who, because either of age or economic limitations, are unable or do not desire to maintain a home of their own. It is a common cause of complaint in the high-grade residence suburbs which prohibit apartment houses that too many of their young men and women as they marry must, because of the lack of apartments and their inability to maintain a one-family house, leave their native community to make their homes, away from friends and relatives, in crowded city apartments. Similarly, the older members of the community who, having reared their children, wish to give up housekeeping responsibilities, can only do so by removing from the community. The result is that such a suburb rapidly falls a victim to the regulations it has erected for its protection; the very citizens who have fixed its social ideals during the past generation or who would carry these ideals into the next generation are being gradually exiled from the community and replaced by strangers. Multifamily houses in these suburbs would, if balanced in number and kind to this need, afford opportunity to members of the younger generation, while they were increasing their earning power, to occupy an apartment, and then, when they could better afford it, perhaps move into a home vacated by a family of the older generation who were retiring to take up their residence in an apartment. If this idea worked out, a limited number of multifamily residences would be a means not of destroying but of preserving the social stability of a suburban community.

Whether designed for suburbanites or city dwellers, the superiority of the garden apartment over the typical apartment cannot be questioned. The area requirements for garden apartments should be so drawn as to induce owners to group open spaces, to assemble what would otherwise be small courts into large open spaces, and instead of locating them in the interior of the building, to place them on the outside of the building where, in conjunction with open spaces on neighborhood property and with streets, they will have a maximum daylighting and sunlighting value not only to their own building but to all buildings.

Apartment house zones are usually enlarged at the expense of one- or two-family residence zones. Land values in these zones do not demand intensive development, yet the zoning regulations commonly permit a type of development which practically scraps the value of the present residence buildings. Zones for garden apartments, if properly designed, will maintain not only these values but the permanent value of apartments by surrounding them with ample open space. As people become more aware of the desirability of garden apartments, it is to be expected that regulations for multifamily houses will be tightened so as completely to eliminate the older type of apartment house from the entire city.

#### Country Estates and Green Belts

A salutary development, which was not anticipated at the time the family-per-acre limitation was first introduced, is its application to the protection of large estates. Exclusive residential communities within commuting distance of large cities, like Oyster Bay, Long Island, for instance, demand a minimum area of 4 acres for a one-family house. This provision has been challenged on the ground that it bears no relationship to the objects for which the police power may be exercised, and especially on the ground that it constitutes class legislation. Are these allegations true?

It cannot be denied that both charges appear to be amply supported by facts in certain instances. It would be unfortunate, however, if the police power could not be employed to support the requirement of a minimum lot area larger than that of the customary suburban lot with its area of 5,000 to 20,000 square feet. First of all, semirural suburban communities of country estates occupy a different position in relation to the usual urban convenience than do the typical more or less densely developed suburb. Wells are frequently used instead of city water; septic tanks or cesspools in lieu of sanitary sewers; narrow lanes instead of comparatively wide streets. Then, too, these developments may accommodate a considerable number of animals—cows, horses, swine, sheep, not to mention chickens. These considerations necessitate a larger plot area in country than in city. Sanitation no less than health demands plots of ample size. There are, moreover, other considerations. Because of the absence of city water, there are no fire hydrants. Such fire department as may exist, moreover, is probably a volunteer department with primitive equipment located at a considerable distance from the average house. Safety from fire no less than public health and sanitation, therefore, justify the maintenance of a sparse development. Such arguments as these may persuade courts to uphold the multiacre plot requirement as a valid use of the police power.

Should the large acreage plot provision be upheld by the courts, it will find an enlarged field of usefulness in aiding to control the development of the average city. The outlying, undeveloped territory adjacent to a rapidly growing city, for instance, might be placed in a five, ten, or even twenty or more acre residence zone, in order to thwart reckless gambling in suburban real estate by speculators in unnecessary subdivisions. A large acreage plot requirement would thus enable a city to catch up with its present subdivided areas before new areas were platted. A municipality with such a provision in its ordinance would so control subdivision developments that the number of subdivided lots in the community would keep step with growth of population. The urban community, instead of sprawling in a chaotic manner over the whole countryside, could be kept compact and its various parts and elements organized for different functions. Economy and efficiency would thus replace some of the chief elements of waste in city development.

Above all, this method of control would enable cities to give that practical effect to the greenbelt on the outskirts of the urban area which is so essential, if the territorial extent of a city is to be controlled. Thus, the large acreage plot should enable the city of the future so to plan its area that it would be neither ruined from within by uncontrolled and unneeded subdivisions nor exploited from without by inferior standards of development employed by competitive satellite communities across its border. The perfection of the large acreage plot provision into an efficient tool to be used in attaining a greenbelt about cities, separating urban and rural development, and adjusting the plotting and marketing of lots to current requirements fixed by population growth, or even limiting the maximum area and population within a city in the future, is a matter of such importance to the technique of effective city planning that it will undoubtedly challenge the best minds in planning.

#### Front Yard Requirements

A zoning ordinance which controls front yards and setbacks on all streets throughout a city is of inestimable value to the whole community. The advantage that such front yards established under the police power have over building lines under eminent domain lies in the fact that they are established on all streets throughout the entire city at one time, without the payment of damages, while those created under eminent domain are adopted separately for each street in an independent proceeding, each proceeding necessitating the appraisal of damages and benefits. Building lines under eminent domain are usually established laboriously over a period of years and, thus, frequently bear little relationship to the line across the street or to the line in neighboring blocks, and never any relationship

to the needs of the city as a whole. Where this is the sole means of procedure, usually most of the streets have no building lines established upon them at all. Under such circumstances, it is surprising that there should still be cities which neglect to adopt police power building lines in the control of their building development.

When the first mandatory front yard requirement was incorporated in a zoning ordinance about 18 years ago, it was disguised as a provision for outer courts, so that the courts of law would not recognize it as an ordinary building line. As the cause of zoning won its way in the courts, these provisions were elaborated upon until they formed the comprehensive front yard provisions characterizing present-day zoning ordinances.

Most ordinances make the average depth of front yard in existence at the time the ordinance is adopted the minimum front yard to be provided on each side of the street within the block. If this average front yard is unreasonably deep, because some or all of the buildings are exceptionally far back from the street, then the front yard need not be greater than a certain number of feet laid down in the ordinance. Front yards of more than 50 feet are seldom demanded. If either side of the street within the block is vacant, then a definite building line is fixed by the ordinance. This distance varies all the way from 15 to 50 feet.

In addition to such requirements, it is becoming increasingly common to insist that buildings be set back a minimum distance from the center of the street, even if compliance with this rule operates to force buildings farther back upon the lot than the average front yard in the block. The distance back from the center of the street is sometimes fixed at 30 feet, very frequently at 40 feet, and in many cases at 50 feet.

#### The "Traveling" Building Line

In formulating front-yard provisions for residence zones, care should be taken to avoid what has been termed the "traveling line." Whatever the depth of the front yard as defined by ordinance, it should be a fixed depth, equally applicable to all buildings thereafter built on that side of the street within the block. Some cities have thoughtlessly fixed the date for determining the set-back line at the time of the proposed erection of the new building. Where buildings within the block at the time of the passage of the ordinance did not observe a common set-back line, this has resulted in the requirement of a different front-yard depth for every new building.

Other cities have made the error of requiring larger set-backs for high buildings than for lower buildings within the same zone. This mistake has been quite commonly committed in apartment-house zones. An irregular street front (unless planned as such) is never desirable as a permanent feature of a street facade. In some cases, it may be impossible to avoid it in the transitional stages of widening a narrow street, through a gradual recession of building fronts, but this is something different from proportioning the depth of front yard to the height of a building on the lot. Such a requirement is mischievous in perpetrating needless ugliness upon the community.

#### Set-back From Center of Street

Apartment houses, stores, and factories on corner lots are in some cities obliged to set back a minimum distance from the center of both streets, although one- and two-family houses in these very same cities and in these very same zones need observe the front-yard requirement upon only their narrower street front. Although apartment zones are usually subject to their own appropriate front-yard requirements, the set-back in business and industrial zones is invariably in lieu of the front yard. How is this apparent discrimination against the multifamily house and the business building justified?

Probably nobody would dispute the fact that comparatively little traffic congestion results from the one- and two-family dwelling. It is when large, multifamily houses or stores are built that the original narrow streets of a community become inadequate to care for the traffic they are called upon to bear. With the introduction of stores, streets which formerly carried few vehicles are loaded beyond capacity with both moving and parked cars, so that traffic, in many instances, barely crawls. A 40- or 50-foot street is incapable of caring satisfactorily for the needs of even a suburban business community. This is known before it is so built up; there is no need to build up the area with the maximum permitted height of buildings in order to ascertain the incapacity of the streets. Common sense, therefore, dictates that the condition which will at a later date inevitably result should be anticipated through the present establishment of set-back lines to be observed by these buildings.

#### Set-backs on Corner Lots

Most ordinances insist upon compliance, in the case of corner lots, with the front-yard requirement on only one street. Usually, a corner lot is considered as fronting upon the street with the narrower frontage; where the two frontages are of equal length, the owner has the privilege of electing the frontage to observe the front-yard requirement. A lot that runs through the block from street to street must observe the front yard demanded on both streets.

These rules may, in some instances, work more harshly upon one lot than upon another, but an appeal

in such cases may always be taken to the board of adjustment. On the whole, experience supports the wisdom of these provisions. Indeed, the tendency, instead of relaxing them, is to make them more comprehensive.

Much unwarranted sympathy may be wasted over the cruelty of subjecting owners of corner lots in suburban business zones to a set-back on the side street. Let us remember that adjoining residence land is seldom worth over $50 to $80 a front foot, while business property sells for from $200 to $1,000 a foot. Instead of limiting our thought to the land included within the set-back restriction which the owner cannot use for business purposes, let us think of the huge increase in values the owner has enjoyed as a result of the business designation in the zoning plan. Had the community kept his property within the residence restriction, it would probably be worth a mere tithe of what it is, even subject to the set-back line on the side street, in the business zone.

The set-back line is, moreover, designed to benefit the owner's property. It is intended to enable a business district to care for increasing trade. If no heed is paid to the time when the present street plan will be entirely swamped with the increasing traffic load put on both sidewalks and roadways, the area will, unless expensive street widenings are carried out, be apt to suffer economic blight with a distinct falling off in both business and values.

Some cities have realized that the requirements that all corner buildings, without exception, set back a minimum from the center of the side street would, in some instances, result in absurd situations. They have sought to overcome this difficulty in several ways. First of all, they protect narrow corner lots from an unreasonable application of the rule by providing that not more than 30 percent of the width of the lot shall be affected by the set-back from the center of the side street. Then, to obviate deep set-backs on either relatively unimportant side streets in no need of prospective widening or streets improved with such expensive structures as to make widening impracticable, they have related the set-back to the major thoroughfare plan. In cases where the set-back lines secure a space between buildings on the two sides of a street wider than that contemplated in the major thoroughfare plan, they provide that the set-back from the center of the street need not exceed one-half of that proposed width.

Street improvements in business districts are seldom of benefit to property in one- and two-family districts. Property in such localities practically never goes up in value as a result of a street extension or widening in a neighboring business center, unless such property itself becomes available for business development. Yet, property owners in the business centers of cities are everywhere anxious to shift the cost of improvements they wish effected in their neighborhood to the shoulders of unbenefited owners of small houses. Does not fairness demand that these owners be obliged to bear their own burdens? That is what the set-back line in business zones purports to do.

There is also another aspect to this question. It relates to the position of the property owners facing the side street back of the corner lot. They are obliged to observe the front yard requirement of their residential zone. If the corner lot in the business zone at the end of the block need provide no set-back, then these owners will have their view, light, and air seriously diminished. Fairness demands that the corner lot be compelled to observe a reasonable set-back on the side street. The situation of such lot owners in the residence zone immediately back of the corner lot is particularly deplorable in the absence of a set-back on the side street.

#### Need for Set-backs in Commercial Zones

Unless a city requires set-back lines in commercial zones, much of the potential value for street widening purposes of the front yards so laboriously evolved over a long term of years in residence zones will be wasted when these zones, due to increasing demands of trade, are gradually changed into business zones.

To develop and maintain a uniform set-back and then rescind it at the crucial time when increased traffic makes street widening imminent, is to pursue a course which is neither rational nor foresighted. Set-back lines in business and industrial zones need not be identical with those required in residence zones; there are sufficient differences between the two classes of zones to justify a considerable difference in their respective set-backs. This, however, is a different consideration from requiring no set-back at all in commercial zones. By demanding a minimum set-back from the center of the street in such zones, a sufficient space can be secured in due time to guarantee a street of adequate width to serve the increased traffic of the prospective extension to the business zone in a permanently satisfactory manner. The land within the set-back lines of the business zones, no less than the land within the front yards of the residence zones, would belong to the property owners until duly taken by the municipality. Being confronted with the fact that they could not build upon it, even if they kept it, would not the owners, in view of the need for additional street space to make their property more accessible for business, be willing in a considerable number of cases to cede these strips to the city? If they did not, the city could procrastinate in changing the zones. This is an aspect

of the subject relating to set-back lines, which in the future will undoubtedly be given increased attention.

#### Supreme Importance of Open Space Requirements

That the need for comprehensive zoning is still inadequately appreciated by cities is evidenced by the fact that most zoning ordinances pay no attention to height or bulk of buildings; and of the ordinances that control the volume of buildings and the open space about them, only a portion go into the subject in any adequate way. Many make no provision for front yards. Others refrain from direct limitations upon overcrowding. Still others ignore restriction upon the percentage of lot area that may be occupied by buildings. Of the probably 1,400 municipalities which have adopted zoning in this country, perhaps not more than 20 percent have what may really be termed comprehensive zoning in the fullest sense of the term.

Apparently, the thought has not occurred to many municipal governments that preservation of the open space about homes is of as much importance to the health and safety of the community as the exclusion of stores from residence zones; that mandatory front yards may be as influential in preserving home values as restrictions against apartments; that direct limitations upon congestion are indispensable to prevent a future overcrowding of land. Zoning today does not necessarily mean anything conclusive in the way of a deed well done; more important than the mere existence of an ordinance is the kind of ordinance. Many municipalities labor under the illusion that a rudimentary use ordinance, adopted years ago and since then many times amended, affords them ample protection, and yet their development is everywhere wide open to attack by out-of-place buildings violating the height and bulk standards of different neighborhoods. In their ultimate effect upon the general plan of the community, the open space requirements laid down in a zoning ordinance may be made to transcend in importance every other phase of zoning.

### The Limitations Upon Height

We have arrived at a stage in our city development where we must economize in the use of daylight. To let light travel 92,870,000 miles from the sun to our own little alley and then be lost to us through too deep or too narrow a court or through too small or improperly placed windows is not only stupid but reckless and extravagant waste—waste in land, waste in buildings, waste in human health and happiness.

Few persons realize the tremendous importance to present-day development of adequate courts and yards and of proper building heights. The increased number of apartments and offices in many cities which derive their sole light and air from courts has resulted in a steady lowering of the average daylight, sunlight, air, and ventilation standards in a vast majority of the newer rooms and offices.

#### Height Limits

The first cities to restrict the height of buildings used a multiple of the street width as a basis for limitation. It soon became evident that a multiple of the street width, however useful it might be as an auxiliary in preventing too high buildings on exceptionally narrow streets, was open to serious objections when relied upon as the principal means of curbing height. As a consequence, flat height limits have become more and more prevalent.

One of the chief objections to a multiple of the street width as a method of limitation is that it does not produce a uniform type of development throughout a district. The fact that a very high building happens to be located on a wide street hardly mitigates the injury done to lower buildings in the neighborhood that have their height controlled by narrower streets; the blight suffered by them is the same no matter how wide or narrow the street is on which the high building fronts.

Basing height regulations upon a multiple of the street width does not obviate the necessity of establishing several classes of height zones, each governed by its own multiple of the street width. The height limit in a particular case, therefore, varies not only according to the width of the street but according to the zone in which the building happens to be located. The result is that the number of limitations, expressed in terms of a definite number of feet or stories, is multiplied beyond any reasonable need in a city. This breaks down the distinction which should be maintained between different classes of zones. Thus, a greater difference often exists between the height limits established for the widest and narrowest streets within a given zone than between the narrowest and widest streets in two different zones. Indeed, there are instances in which higher buildings are allowed on wider streets in a zone apparently subjected to a more stringent restriction than on narrower streets in a zone with a more liberal multiple.

It was to obviate such conditions that later ordinances, with exceptions for towers, subjected buildings in different zones to a flat limitation. Although the flat limit has avoided many difficulties resulting from a multiple of the street width, it has often, because of being too liberal, fallen short of its potential effectiveness in limiting the bulk of commercial buildings.

#### Set-backs

There is little connection between towers and set-backs. The set-back privilege, in enabling an owner to obtain his desired bulk at a comparatively low level, acts rather as a deterrent than as a stimulus to the

erection of towers, for today an inflexible set-back and dormer provision in various cities favor the construction of compact buildings, having ugly excrescences projecting beyond the natural facade and containing a maximum cubage at elevations near the street level.

A direct result of the set-back, which should by no means be overlooked, is the effect it is having upon the character of open space used to light and ventilate high buildings. In the older skyscrapers, small, dingy, inner courts were more commonly used than is the case in the present set-back building. As the upper stories must, in the latter building, recede from the street as they go up in height, the use of an inner court is not nearly so convenient as that of an outer court. The result is that many a building has, in effect, been turned inside out; now the core of the building, instead of being devoted to narrow light-shafts, is the part of the building that is carried up, while the courts are so placed that they open into the streets. Above the point where the set-back plane begins, the courts become shorter and shorter until they soon disappear, and all of the top portion of the building, abandoning the use of courts, is daylighted through its exposure to a considerable portion of the sky dome. The gain to light and ventilation affected as a result of this revolution in the use of courts in high buildings is inestimable.

Theoretically, a set-back in the street facade of a building conserves the area of the lower floors at the same time that it admits a given quantity of daylight to the bottom of the street facade. In other words, the set-back attempts to satisfy the legitimate demands of buildings for daylight at the same time that it permits the maximum allowable bulk. That the use of set-backs materially increases the height to which building may be erected without any diminution in the amount of daylight received at the base of the street facade admits of no question; indeed, all set-backs, no matter how small or how large they are, or how high up they begin, increase the volume of light received not only at the base of the facade but at every point throughout the height of the facade.

The illumination received at any point on the facade, whether at the foot or elsewhere, depends upon the ratio of the horizontal distance between that point and the top of the facade on the opposite side of the street to the depth of that point below the top of the opposite street facade. It is only the top of either facade that receives the benefit of the full set-back on both sides of the street. Below the top of the facade and above the first set-back plane, it is only so much of the set-back as is on the same side of the street at the level of the point in question, in addition to the full set-back on the opposite side of the street, that is effective in increasing illumination. Below the first set-back level, it is only the set-back on the opposite side of the street that increases the illumination. The increased illumination obtained at the bottom of a facade depends for any particular set-back ratio—that is, the ratio of the height of the vertical wall to the distance it is set back from the vertical wall below—upon the proximity of the first set-back level to the ground: the less the height of the street wall to the point of commencement of the first set-back, the more light admitted to the base of the street facade.

Every set-back is of more importance to that portion of the facade above the first set-back level than to the portion of the facade below the set-back level. This is due to the fact that either facade obtains below the first set-back level the benefit of only the set-back in the opposite facade. Above that level, each facade receives the benefit of either part or all of its own set-back in addition to the entire set-back in the opposite facade.

Unless the set-back ratio is the same or less than the height of the street wall below the first set-back level divided by the street width, each increment in height above the set-back level diminishes illumination at different levels on the street facade. All set-backs should, in other words, be fixed with reference to the bottom of the opposite side of the street facade. That a set-back slope should be established with reference to the opposite side of the street is such an elementary proposition that it should admit of no question. Only a set-back line so drawn delivers the given quantity of light to the windows on the opposite side of the street, yet many ordinances, paying more heed to considerations of expediency than to laws of light, establish the set-back slopes with reference to the center of the street.

Let us illustrate. Here is an ordinance which bases its height limitations upon a multiple of the street width. In its most liberal zone, the height is restricted to two-and-one-half times the street width at the street line; above this limit, buildings may be erected to a greater height provided the facade is set-back 1 foot horizontally to each five feet of building height. In such a case, each foot of street width below the set-back plane admits of 2½ feet of building height; above the set-back plane, however, each foot of open space permits, insofar as the opposite side of the street is concerned, 5 feet of building height. Such a set-back provision places a premium upon the construction of high buildings occupying as much as possible of the lot area; each increase in height diminishes the angle of light at the base of the street facade and thereby nullifies the very purpose of the set-back, especially upon the narrower streets.

The same set-back applied at increased heights above the street level has the progressive effect of diminishing the angle of light at the base of the opposite facade on any street. It also provides entirely difference angles of light at the base of the facade on streets of different widths. In fact, it requires smaller angles of light for high buildings on narrow streets than for buildings of the same height on wide streets. A set-back ratio greater than the ratio of the height of building to street width diminishes the angle of light at the base of the opposite facade and, therefore, the illumination as the height of the building is increased. This diminution of the angle of light is particularly disastrous in the case of high buildings and narrow streets where the angle of light and the consequent illumination is small and on no account would be diminished in increasing the height of buildings. These facts are shown in the figures below, for streets 60 feet wide and 100 feet wide, with buildings 2½ times the street width in height and a set-back ratio of 5 to 1.

| | Street 60 feet wide | | | Street 100 feet wide | | |
|---|---|---|---|---|---|---|
| a | b | c | c/b | b | c | c/b |
| 00 | 60 | 150 | 2.50 | 100 | 250 | 2.50 |
| 10 | 70 | 200 | 2.85 | 110 | 300 | 2.72 |
| 20 | 80 | 250 | 3.12 | 120 | 350 | 2.91 |
| 30 | 90 | 300 | 3.33 | 130 | 400 | 3.07 |
| 50 | 110 | 400 | 3.63 | 150 | 500 | 3.33 |

a = Width of set-back on each side of street (feet).
b = Width of street plus set-back on one side of street (feet).
c = Height of building in feet.

Whatever volume may be added to a building as a result of set-backs in the street facade must as a rule be incorporated into the buildings, if at all, at the level defined by the set-back plane. An owner, for instance, who might choose to occupy a smaller proportion of his lot area in a higher building of the same bulk as that contained within the set-back envelope of his lot, is not permitted to do so. In this respect, the ordinary set-back penalizes the construction of the most useful type of building with a given bulk. Whether it may not be advisable to compensate owners who refrain from utilizing their allotted volume at the lower levels, by permitting them a proportionately greater bulk at the higher levels is a question that merits thorough examination. Owners might, for example, elect to put up a tower with the same bulk as would be contained in a set-back building. But towers may not occupy more than 25 percent of the lot area above the set-back plane. The result is that, instead of erecting a tower with every window well illuminated, a builder erects a compact building containing a maximum cubage at an elevation near the street level with most of the windows in the lower floors poorly illuminated.

**New Ideas Regarding Height Problems**

Probably in no single respect has zoning failed more signally than in restricting the height of commercial buildings. This fact is all the more remarkable since the first attempts in zoning were directed toward limiting the height of skyscrapers. With time, it is becoming increasingly evident that in some respects we have misconstrued the problem of the high building. In the past, most cities have placed the emphasis upon height limitation and limitation at the lowest politic height. They have not succeeded in this attempt; more often than not, the height limit imposed has been a very liberal one, frequently even a fantastic one. Now we are perceiving, however, that the problem presented by the skyscraper is not one to be solved so much through height limitation—especially where the limitation fits so loosely that it affects only minor particulars in the design and arrangement of the tallest buildings erected—as it is through exercising such control over the construction of all buildings, whether high or low, as will secure to each new building permanently satisfactory illumination at the same time that it causes a minimum obstruction to the daylight illumination of neighboring buildings. A high building erected as a tower occupying a small percentage of the lot secures, around its whole perimeter and at all levels where it is obstructed by other buildings, more illumination than a lower building containing the same bulk but occupying a greater proportion of the lot area. There is no more congestion of pedestrian or vehicular traffic, or of working population, in one case than in the other, but the tower obtains for itself vastly more light and air.

That builders themselves are becoming conscious of this fact is suggested by the change that has in recent years been wrought in towers. Formerly, the tower was an incident or ornament to a huge building; and relatively little rentable space was located there. Now, the building itself tends to be a tower. Indeed, this evolution has gone so far in recent years that frequently most of the building is included within the tower.

Commendable as this practice is, it overlooks certain important considerations. Given a certain bulk, a high building, it is true, is better illuminated than a low building. Such a structure, however, cuts off a considerably increased daylight flux from neighboring buildings. This part of the problem has until now been ignored by our zoning ordinances.

To illustrate the situation concretely, let us compare the relative daylight flux cut off from its surroundings by an unobstructed square building erected on a plot 200 feet square, having a volume of 4,000,000 cubic feet and constructed to different heights. A building of such a

fixed cubage would, as indicated below, appropriate to itself a considerably greater daylight flux with each increase in height. The figures below make no allowance for the light incident upon the ground around the building.

| | | | | | |
|---|---|---|---|---|---|
| 1. Height of building (feet) | 156.2 | 200 | 300 | 400 | 1,000 |
| 2. Width of building (feet) | 160.0 | 141.4 | 115.5 | 100 | 63.3 |
| 3. Units of daylight obstruction to neighboring property | 15,116,800 | 15,313,600 | 16,523,064 | 18,000,000 | 26,120,000 |

A building 300 feet high, though occupying only 52 percent as much ground, nevertheless appropriates more daylight than a building 156.2 feet high with the same volume. A tower 1,000 feet high, though occupying only 4,000 square feet of ground, absorbs 70 percent more daylight than a building 200 feet high occupying five times as much ground but having the same cubage.

The high buildings heretofore erected have recognized but half of the daylight problem—that of their own illumination; the obstruction they cause neighboring buildings has been completely ignored in their arrangement and design. Yet, an undue obstruction to the light of an existing building is an evil as much to be avoided as the proper illumination of a new building is an end to be desired. Every high building should be obliged to pay as much consideration to the light obstruction it causes neighboring buildings as to its own illumination. Unless the obstruction caused neighboring buildings plays as important a role in determining the arrangement of each building as do considerations concerning its own illumination, it is only a question of time until all the nice details worked out with reference to the daylighting of each building will be set at naught by the light obstruction of other buildings. In order to protect the illumination of other buildings in the community, no building should be permitted to appropriate a greater flux of daylight on its roof and several walls than that incident upon the lot it occupies.

What observance of this principle would involve may be suggested by showing what different types of unobstructed square buildings may be erected with a constant obstruction value of 8,000,000 daylight units to surrounding property. No allowance is made for interior courts, the space included in courts being considered as so much cubage within a building.

| | | | | | |
|---|---|---|---|---|---|
| 1. Ground area of building (sq. ft.) | 25,600.0 | 20,000 | 13,333 | 10,000 | 4,000 |
| 2. Width of building (ft.) | 160.0 | 141.4 | 115.5 | 100.0 | 63.3 |
| 3. Height of building (ft.) | 45.0 | 71.4 | 115.5 | 150.0 | 282.5 |
| 4. Volume of building (cu. ft.) | 1,152,000 | 1,428,000 | 1,540,000 | 1,500,000 | 1,130,000 |
| 5. Vertical wall space (sq. ft.) | 28,800 | 40,400 | 53,300 | 60,000 | 71,400 |

All these buildings appropriate the same daylight flux. The higher buildings, however, because of the smaller lot occupied, have a larger vertical wall area exposed to the sky than do the low buildings. They are, therefore, better illuminated. The taller structures, having so small a plan, moreover, need no courts, as every room is an outside room. The volume indicated for the lower buildings therefore appears more favorable than it actually is, as a considerable portion of their bulk must be devoted to courts in order to illuminate the interior space. Although the total obstruction to daylight is the same for the several buildings, the high buildings, because of their narrower width, cause less obstruction to the illumination at nearby points, and because of their greater height, more obstruction at distant points as well as at higher levels, than do the lower buildings.

Studies like the above show that, for any particular use, height, and volume of building, there is within comparatively narrow limits an optimum size and shape of lot. The outside limits on the largest area that can be satisfactorily daylighted within a single building unit are no less definitely fixed than those determining the smallest plot area. Plots which are too large to be developed most successfully as single units may, unless great care is taken in their planning, give rise to conditions as undesirable as lots that are too small. In any satisfactory plan for daylight illumination, the plot, block, and street layout must all be coordinated with the contemplated building development. At present, many high buildings may almost be said to sabotage their own daylight by ignoring this elementary principle.

Much has been written about the desirability of limiting volume rather than height of buildings, and some ordinances leave the height of buildings unrestricted so long as their bulk is kept within certain limits. Yet the whole subject, insofar as it relates to daylight illumination of buildings, is inadequately understood. Roofs of like areas intercept, regardless of shape, provided they are unobstructed, like volumes of daylight flux. The same is also true of like wall areas, regardless of shape, provided they too are unobstructed. An unobstructed roof, however, obtains illumination from the whole dome of the sky; a vertical wall receives illumination from but one-half of the dome of the sky. A unit area of unobstructed roof receives, therefore, twice the daylight flux received by a unit area of unobstructed wall space.

From these facts, it follows that a building may have its height raised above the prevailing roof level in its neighborhood without increasing its total obstruction to the daylight illumination of buildings in the vinicity, only if the daylight flux on the added height of its walls does not exceed the diminished daylight flux upon the roof and the lower portion of the walls. As the ground plan of a building diminishes and its height is proportionately increased, so that the added wall space exactly

appropriates the daylight flux subtracted from the roof and the lower portion of the walls, there is a gradual increase in bulk up to a certain maximum point; then, because of the diminished plan of the building, it turns, and bulk of the building begins to diminish notwithstanding its increased height.

Although daylight has always been one of the most fundamental requirements of buildings, no phase in their design and construction has been less understood. Questions of vital importance to a proper control of height and bulk of buildings have been quietly passed over by both architect and city planner. The consequence is that we are today further from a scientific approach to the problems of the natural illumination of buildings than we have been at any time since the introduction of steel construction gave rise to the skyscraper.

The constituent parts of nearly every city plan—its lots, blocks, streets—were evolved long before the first skyscraper was built. These features of the plan are, therefore, unrelated to the peculiar needs and requirements of the skyscraper; yet they so intimately affect the well-being of the high building that the skyscraper cannot attain its highest usefulness unless the ground plan of the locality is adjusted to meet the new demands born with this new form of construction. Unlike the ordinary detached dwelling, the skyscraper cannot be merely placed on a street; to function properly, to deliver the full measure of potential service to the community, the skyscraper must itself be built into its block and its surrounding streets as an integral feature of the plan. Until the open space about high buildings is planned and distributed with as much thought as the structural parts of the building, the present futility attending the construction of tall buildings will persist. Just so long will each skyscraper in its own good season suffer the same darkened rooms, the same costly vacancies, the same loss in rentals, the same mortgage foreclosures which have wrought economic ruin to its older neighbors.

This is not the place to discuss the technical details of the natural illumination of buildings; yet it is well to point out that here lies a practically unexplored field in the control of urban land uses. Were architects and planners to study and master this subject thoroughly, a vast improvement would undoubtedly accrue to the limitations surrounding the height and bulk of buildings.

#### Future Control of High Buildings

Towers lend variety to the skyline and embellish a city as few structures do. If sufficiently numerous, however, towers may obstruct the light and ventilation of neighboring buildings. Up to the present it has been thought that their high cost of construction rendered this contingency unlikely; yet there are indications in some cities that this is now happening. To obviate future objection to them on this score, it is important that they be suitably located on exceptionally large parcels, that they be surrounded with adequate open space, and that only light-colored materials with a large reflection factor be used in their facades. A tower built of black materials might in itself be a work of art, but reflecting no light, it must, insofar as its vicinity is concerned, be a tower not of light but of gloom, destroying the illumination of other buildings.

In order that towers may be permanent architectural assets to a city, they should be restricted to locations where they may be seen permanently to advantage. To assure this result demands, as a rule, an entire block front for each tower. Some such arrangement would restrict the bulk of high buildings to a point where their volume would not be utterly out of scale with the general plan of the city. It would, at the same time, not only permit but encourage the erection of high buildings in a manner that would make them permanently beautiful as well as useful. As additional high buildings were constructed, the earlier buildings would still be assured their required quota of light and air, so that they too would continue to be useful buildings.

#### Need for Revising Zoning Ordinances

Many cities, after adopting their original zoning ordinance, have sat by and done nothing further to advance the cause of good zoning. These cities have apparently thought that the enactment of regulations marked the completion of their zoning work, and that through some sort of mysterious, unexplained, perpetual motion, satisfactory results would be secured. Where this feeling has permeated the official attitude toward zoning, the ordinance has generally been indifferently enforced, changes in the plan have been frequent and ill-advised, and favoritism and friendship have been more instrumental in securing concessions from the board of appeals than proof of unnecessary hardship within the true spirit of the ordinance. In such cases, the adoption of the ordinance naturally indicated the high-water mark of the public's interest in zoning. Such a spirit in the administration of a plan is bound to bring it into disrepute and contempt.

A zoning ordinance is, in some respects, like an automobile. With a car, after long service and rough usage, it is not surprising that an occasional bolt needs tightening, that the brakes require relining, that the cylinders demand a carbon job, or that an old tire must be replaced. So, too, a zoning ordinance needs a little servicing once in a while, or else it may in time be found to be "running on one cylinder."

The adoption of a zoning ordinance, far from marking the completion of a zoning program, but inaug-

urates it. Instead of being the end, it is the beginning. It must, therefore, be administered by persons as fully cognizant of the difficulties to be encountered as of the fundamental purposes of the plan. An unsympathetic administration can, within a short time, put even the best zoning plan on the rocks.

Above all, let it be understood that the adoption of the original ordinance but marks the point from which further progress should be made in zoning. Mistakes will have been made both in the original regulations and in the boundaries defining the initial zones. These should, of course, be corrected as they become evident. Nor should the fact be overlooked that zoning is a dynamic science; such progress has been made in zoning that the earlier ordinances already impress one as primitive when compared with some of the more recent ordinances. Every city should, of course, plan and strive to benefit through these advances, whether they relate to new victories in the litigation of disputed points in zoning or to improvements in zoning technic involving better methods of controlling divergent uses, defining zones, limiting heights, establishing building lines, regulating courts and yards, restricting overcrowding, or handling the nonconforming building.

# PART III—APPENDIX B

## TABLES AND OTHER FIGURES ON THE AMOUNT OF LAND ACTUALLY USED AND ZONED FOR VARIOUS PURPOSES IN AMERICAN CITIES[1]

The questionnaire sent out by the National Resources Committee in 1936, mentioned in Section II of this report, sought to determine the amounts of land in various private uses as well as in public uses in over 150 cities throughout the country. Few cities, however, sent satisfactory replies, and even the figures from six cities given in the following tables—representing the only cities[2] from which returns were considered reasonably accurate and complete—do not check as to totals with the totals used in previous tables obtained from the Bureau of the Census. They are close enough, however, so that it is believed that the percentages, ratios, and averages based on them can be assumed reasonably to represent the actual situation.

Because cities vary greatly in the amount of vacant land within their limits, an average of the percentage of total city area in various uses would not be very significant. Percentages of the developed urban areas are presented in Table 2 and compared with figures given in *Urban Land Uses* by Harland Bartholomew.[3] The names and populations of the 16 self-contained and 6 satellite cities covered in the Bartholomew study have been previously given.[4] The 6 cities replying to the National Resources Committee questionnaire are generally larger than the self-contained cities covered in the Bartholomew study, which, in turn, are generally larger than the satellite cities. In the case of most uses, definite relationships based on size are observable. Similar relationships are also observable in Table 1 showing the ratios of land in various urban uses in the 6 cities replying to the N. R. C. questionnaire and the Bartholomew cities.

[1] **By William H. Ludlow.**

[2] Louisville, Ky., was not requested to furnish information, because figures on it are presented in *Urban Land Uses* by Harland Bartholomew. Figures on Portland, Oreg., are from *The Plan-It*, City Planning Commission, Portland, Oreg., vol. 10, Nos. 10, 11, 12, Oct., Nov., Dec., 1936.

[3] *Harvard City Planning Studies IV*, pp. 126–149.

[4] See section on Extent of Public Ownership of Land.

TABLE 1.—*Ratios of land in various urban uses to population—Comparing figures from 6 cities replying to National Resources Committee questionnaire with those given in "Urban Land Uses," by Harland Bartholomew*

[Acres per 100 persons]

| Cities replying to National Resources Committee questionnaire | Population in 1930 | Single-family | 2-family | Multifamily | Total dwelling area | Commercial area | Light industry |
|---|---|---|---|---|---|---|---|
| St. Louis, Mo | 821,960 | 0.83 | 0.31 | 0.31 | 1.45 | 0.21 | 0.17 |
| Minneapolis, Minn | 464,356 | 2.70 | .15 | .06 | 2.91 | .13 | .19 |
| Portland, Oreg | 301,815 | 2.94 | .07 | .11 | 3.12 | .28 | .14 |
| Providence, R. I | 252,981 | .56 | .43 | .29 | 1.28 | .25 | .39 |
| Duluth, Minn | 101,463 | 2.96 | .39 | .20 | 3.55 | .30 | .76 |
| Little Rock, Ark | 81,679 | 3.14 | .12 | .07 | 3.33 | .20 | 13 |
| Averages | | 2.19 | .25 | .17 | 2.61 | .23 | .30 |
| *Bartholomew study* | | | | | | | |
| Self-contained cities | | 2.94 | .14 | .08 | 3.15 | .18 | [4] .24 |
| Satellite cities | | 4.68 | .18 | .12 | 4.98 | .13 | |

| Cities replying to National Resources Committee questionnaire | Heavy industry | Railroad property | Combined industry and railroad property | Streets | Parks and playgrounds | Public and semipublic | Total developed area |
|---|---|---|---|---|---|---|---|
| St. Louis, Mo | 0.21 | 0.21 | 0.59 | 1.07 | 0.31 | 0.52 | 4.15 |
| Minneapolis, Minn | | | 73 | 1.49 | .53 | .59 | 6.38 |
| Portland, Oreg | .32 | .41 | .87 | 3.08 | .39 | .54 | 8.28 |
| Providence, R. I | .07 | (1) | .46 | 1.05 | .46 | .94 | 4.44 |
| Duluth, Minn | .59 | .40 | 1.75 | 4.93 | 4.04 | 1.44 | 16.01 |
| Little Rock, Ark | .32 | .35 | .80 | X | X | X | 8.38 |
| Averages | [2] .30 | [3] .34 | .87 | [2] 2.32 | [2] 1.15 | [2] .81 | 7.94 |
| *Bartholomew study* | | | | | | | |
| Self-contained cities | [4] .22 | [5] .46 | .92 | 2.82 | .48 | .62 | 8.18 |
| Satellite cities | | | 1.17 | 3.01 | .11 | 1.01 | 10.41 |

TABLE 2.—*Percent of developed area occupied by various uses—Comparing figures from 6 cities replying to National Resources Committee questionnaire with those given in "Urban Land Uses," by Harland Bartholomew*

| Cities replying to National Resources Committee questionnaire | Single-family | 2-family | Multifamily | Total dwelling area | Commercial area | Light industry |
|---|---|---|---|---|---|---|
| St. Louis, Mo. | 20.0 | 7.5 | 7.5 | 35.0 | 5.0 | 4.1 |
| Minneapolis, Minn. | 42.1 | 2.4 | 1.0 | 45.5 | 2.0 | 3.0 |
| Portland, Oreg. | 35.5 | .9 | 1.3 | 37.7 | 3.4 | 1.7 |
| Providence, R. I. | 12.6 | 9.8 | 6.6 | 29.0 | 5.6 | 8.8 |
| Duluth, Minn. | 18.5 | 2.5 | 1.2 | 22.2 | 1.9 | 4.7 |
| Little Rock, Ark. | 37.4 | 1.4 | .9 | 39.7 | 2.3 | 1.6 |
| Averages | 27.7 | 4.1 | 3.1 | 34.9 | 3.4 | 4.0 |
| *Bartholomew study* | | | | | | |
| Self-contained cities | 36.1 | 2.1 | 1.1 | 39.3 | 2.4 | [4] 3.2 |
| Satellite cities | 44.5 | 2.0 | 1.7 | 48.2 | 1.4 | ..... |

| Cities replying to National Resources Committee questionnaire | Heavy industry | Railroad property | Combined industry and railroad property | Streets | Parks and playgrounds | Public and semipublic |
|---|---|---|---|---|---|---|
| St. Louis, Mo. | 5.1 | 5.1 | 14.3 | 25.8 | 7.5 | 12.4 |
| Minneapolis, Minn. | ..... | ..... | 11.5 | 23.4 | 8.4 | 9.2 |
| Portland, Oreg. | 3.9 | 4.9 | 10.5 | 37.1 | 4.7 | 6.6 |
| Providence, R. I. | 1.5 | (1) | 10.3 | 23.6 | 10.3 | 21.2 |
| Duluth, Minn. | 3.7 | 2.5 | 10.9 | 30.8 | 25.2 | 9.0 |
| Little Rock, Ark. | 3.8 | 4.1 | 9.5 | X | X | X |
| Averages | [2] 3.6 | [3] 4.2 | 11.2 | [2] 28.1 | [3] 11.2 | [3] 11.7 |
| *Bartholomew study* | | | | | | |
| Self-contained cities | [5] 2.7 | [5] 5.5 | 10.8 | 33.6 | 6.3 | 7.6 |
| Satellite cities | ..... | ..... | 10.3 | 29.7 | 1.3 | 9.1 |

[1] Included in light industry and commercial area.
[2] Average of 5 cities.
[3] Average of 4 cities.
[4] Average of 14 cities.
[5] Average of 11 cities.

X = Unknown.

TABLE 3.—*Acreage and percentage of land in various uses in 6 cities*

| | St. Louis, Mo. | | Minneapolis, Minn. | | Portland, Oreg. | | Providence, R. I. | | Duluth, Minn. | | Little Rock, Ark. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Percent total city area | Acres | Percent total city area | Acres | Percent total city area | Acres | Percent total city area | Acres | Percent total city area | Acres | Percent total city area |
| Single-family | 6,813 | 16.9 | 12,500 | 34.1 | 8,879 | 21.6 | 1,410 | 10.8 | 3,000 | 7.5 | 2,568 | 23.0 |
| 2-family | 2,564 | 6.4 | 700 | 1.9 | 218 | .5 | 1,099 | 8.4 | 400 | 1.0 | 96 | .9 |
| Multifamily | 2,548 | 6.3 | 300 | .8 | 311 | .8 | 738 | 5.6 | 200 | .5 | 59 | .5 |
| Total dwelling area | 11,925 | 29.6 | 13,500 | 36.8 | 9,408 | 22.9 | 3,247 | 24.8 | 3,600 | 9.0 | 2,723 | 24.4 |
| Commercial area | 1,724 | 4.2 | 600 | 1.6 | 844 | 2.0 | 635 | 4.9 | 300 | .7 | 161 | 1.4 |
| Light industry | 1,387 | 3.4 | 900 | 2.5 | 434 | 1.0 | 988 | 7.5 | 775 | 2.0 | 109 | 1.0 |
| Heavy industry | 1,729 | 4.3 | ..... | ..... | 978 | 2.4 | 170 | 1.3 | 600 | 1.5 | 262 | 2.3 |
| Railroad property | 1,757 | 4.3 | 2,500 | 6.8 | 1,226 | 3.0 | (1) | ..... | 400 | 1.0 | 283 | 2.5 |
| Combined industry and railroad | 4,873 | 12.0 | 3,400 | 9.3 | 2,638 | 6.4 | 1,158 | 8.8 | 1,775 | 4.5 | 654 | 5.8 |
| Streets | 8,803 | 21.8 | 6,912 | 18.9 | 9,275 | 22.5 | 2,648 | 20.2 | 5,000 | 12.5 | X | .... |
| Parks and playgrounds | 2,557 | 6.3 | 2,471 | 6.8 | 1,177 | 2.9 | 1,153 | 8.8 | 4,100 | 10.3 | X | .... |
| Public and semipublic | 4,218 | 10.4 | 2,722 | 7.5 | 1,634 | 4.0 | 2,375 | 18.1 | 1,466 | 3.7 | X | .... |
| Total developed area | 34,100 | 84.3 | 29,605 | 80.9 | 24,976 | 60.7 | 11,216 | 85.6 | 16,241 | 40.7 | 6,855 | 61.4 |
| Vacant | 6,361 | 15.7 | 7,000 | 19.1 | 16,164 | 39.3 | 1,882 | 14.4 | 23,600 | 59.3 | 4,334 | 38.6 |
| Total city area | 40,461 | 100.0 | 36,605 | 100.0 | 41,140 | 100.0 | 13,098 | 100.0 | 39,841 | 100.0 | 11,189 | 100.0 |

[1] Included in light industry and commercial areas.
X = Unknown.

Source: National Resources Committee questionnaire.

TABLE 4.—*Comparison of areas in various uses with areas zoned for those uses in 5 selected cities.*

| Use or use classification | St. Louis, Mo. | | | Minneapolis, Minn. | | | Louisville, Ky. | | | Portland, Oreg. | | | Providence, R. I. | | | Acres vacant in each zone | Per cent acres vacant in relation to acres used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acres used | Acres zoned | Ratio of zoned to used area | Acres used | Acres zoned | Ratio of zoned to used area | Acres used | Acres zoned | Ratio of zoned to used area | Acres used | Acres zoned | Ratio of zoned to used area | Acres used | Acres zoned | Ration of zoned to used area | | |
| Single-family residence, including institutions, cemeteries and private recreation | 9,838 | 9,812 | 0.8 | 14,550 | 14,500 | 1.0 | 7,854 | 5,922 | 0.8 | 9,600 | 6,195 | 0.6 | 3,305 | 1,031 | 0.3 | 100 | 0.3 |
| 2-family residence | 2,564 | | | 700 | 3,000 | 4.3 | 503 | 3,653 | 7.3 | 218 | 15,440 | 29.2 | 1,099 | 3,495 | 3.2 | 1,027 | 94 |
| Multi-family residence and hotels | 2,548 | 6,200 | 2.4 | 300 | 5,500 | 18.3 | 437 | 1,616 | 3.7 | 311 | | | 738 | 1,206 | 1.6 | 124 | 17 |
| Retail business and offices | 1,724 | 3,442 | 2.0 | 600 | 2,600 | 4.3 | 537 | 1,909 | 3.6 | 844 | 5,169 | 4.0 | 635 | 1,217 | 1.9 | 158 | 25 |
| Light industry and wholesale business | 1,387 | 4,344 | 3.1 | 900 | 4,550 | 5.1 | 1,113 | 2,835 | 2.5 | 434 | | | 988 | 1,580 | 1.6 | 448 | 45 |
| Heavy industry and railroads | 3,486 | 7,233 | 2.1 | 2,500 | 7,476 | 3.0 | 992 | 2,123 | 2.1 | 2,204 | [1] 3,963 | 1.8 | [2] 170 | 285 | 1.7 | 25 | 15 |
| Vacant and agriculture | 6,361 | | | 7,000 | | | 5,312 | | | 16,164 | | | 1,882 | | | | |
| Total | 27,908 | 31,031 | | 26,550 | 27,726 | | 16,748 | 18,058 | | 29,775 | 30,767 | | 8,814 | 8,817 | | 1,882 | |

[1] Unrestricted.

[2] Does not include railroad property which is included in business and light industrial.

Source: National Resources Committee questionnaire.

# PART III—APPENDIX C

## ABSURD LAND OVERCROWDING ALLOWED BY MANY ZONING ORDINANCES

In his capacity as chairman of the American City Planning Institute's Committee on Research in Urban Land Policies, the editor of *The American City* submitted to that organization at its meeting in Richmond, Va., in May 1936 a report from which the following data are quoted:

Believing that the zoning ordinances of most of our cities need early and drastic revision, your committee has been gathering information as to the degree of land overcrowding now permitted in residential building in the congested sections of large cities. This survey has been made by means of a questionnaire addressed on April 14 to the American Planning and Civic Association's list of 66 planning commissions in cities of over 100,000 population.

The following questions were asked:

1. What is the maximum bulk in cubical contents (or square feet of floor area) which would be legal for a new multifamily building on a 1-acre lot, if built to the greatest height and lot coverage permitted under your zoning ordinance?

2. If your ordinance has a density limit, what is the maximum number of persons (or families) which may be housed in a new building on a 1-acre lot?

Replies were received from 42 cities. Of these, 28 of the answers to Question 1 were sufficiently definite for tabulation.

As will be seen, half of the replies listed gave no answer to the question as to maximum permissible *floor* area. Where such figures were given, as here indicated, some replies showed the maximum floor area for the entire building, and others the maximum area per floor.

It will be observed from the accompanying tabulation that the city of New York, though high in the hierarchy of sinners, is not the only or indeed the worst offender as to permissible land overcrowding with residential buildings. In several cities, including New York, it is legally possible in this year of enlightenment, 1936, for a developer to erect on a one-acre plot a residential building having a bulk of more than 4,000,000 cubic feet. Let us see what this means.

Assuming no serious overcrowding *within* the building—allowing, say 10 vertical feet per floor, and 240 square feet (of the gross floor area) per room—this would mean an occupancy of one person for each 2,400 cubic feet of the bulk of the building. Hence a multifamily building with a bulk of 4,000,000 cubic feet on a one-acre lot would house, on a plot less than 210 feet square, more than 1,600 persons. In other words, 100,000 persons could thus be housed on about 60 acres—less than one-tenth of a square mile—an obviously needless and absurd degree of congestion.

In few cities are there bulk or density restrictions as such. In general, therefore, the figures in the foregoing list are not to be found in the respective zoning ordinances, but represent computations of zoning or planning officials as to maximum bulk for which a permit would be granted under existing restrictions as to height, lot coverage, and requirements as to courts, yards, set-backs, etc.

*Bulk restrictions*

| City | Maximum bulk | Maximum floor area |
|---|---|---|
| | *Cubic feet* | *Square feet* |
| Atlanta, Ga.[1] | 2,065,000 | [2] 247,800 |
| Buffalo, N. Y. | 4,247,100 | |
| Chicago, Ill. | 5,227,200 | [3] 39,204 |
| Cincinnati, Ohio | 2,401,600 | |
| Cleveland, Ohio | 4,250,000 | |
| Dayton, Ohio[1] | 2,756,600 | [3] 34,514 |
| Denver, Colo. | 3,404,660 | |
| Duluth, Minn.[1] | 2,900,000 | [2] 258,800 |
| El Paso, Tex. | 4,650,000 | [2] 26,136 |
| Erie, Pa. | 1,400,000 | [2] 112,000 |
| Fort Wayne, Ind. | 1,306,800 | |
| Hartford, Conn.[1] | 2,250,000 | [3] 30,000 |
| Kansas City, Mo.[1] | 2,634,220 | [2] 293,580 |
| Louisville, Ky.[1] | 4,356,000 | |
| Los Angeles, Calif. | 3,920,400 | |
| Memphis, Tenn.[1] | 4,774,800 | |
| Milwaukee, Wis. | 5,445,000 | |
| Minneapolis, Minn. | 4,237,000 | |
| Nashville, Tenn. | 6,519,000 | |
| New Bedford, Mass. | 1,557,720 | [3] 25,962 |
| New Orleans, La.[1] | 2,209,950 | [2] 176,797 |
| New York, N. Y. | 4,400,000 | |
| Providence, R. I. | 4,664,000 | |
| San Diego, Calif. | | [2] 26,136 |
| Scranton, Pa. | 1,437,480 | [3] 23,958 |
| Spokane, Wash. | | [2] [4] 277,450 |
| Washington, D. C. | 4,261,000 | [2] 390,680 |
| Yonkers, N. Y. | 2,273,400 | |

[1] See also density restrictions in the table in the next column.

[2] Total.

[3] Per floor.

[4] From the Duluth figures the areas of "necessary interior courts" should be deducted. For Spokane the total floor area indicated is "absolute maximum permitted by the zoning ordinance under the city's 8-story height limit, and this total would actually be greatly reduced by required light courts and the necessity of providing windows for all rooms."

### Density Restrictions

Families-per-acre restrictions were reported by the following cities, the figures given in each case being presumably those for the apartment-house district of highest density. The figures are based in most cases on restrictions as to minimum lot area required per family. The Louisville minimum, for example, is 250 square feet of lot area per family; New Orleans, 400 square feet; and Memphis, 625 square feet.

| City: | *Maximum families per net acre* |
|---|---|
| Atlanta, Ga | 70 |
| Dayton, Ohio | 174 |
| Duluth, Minn | 216 |
| Hartford, Conn | 140 |
| Kansas City, Mo | 116 |
| Louisville, Ky | 174 |
| Memphis, Tenn | 69 |
| New Orleans, La | 108.9 |
| Wichita, Kans | 174 |

Replies from Boston and Indianapolis give details as to height limits, open-space requirements, etc., too lengthy to quote here, but without the figures as to possible maximum cubage or floor area specifically requested in the questionnaire. Worcester, Mass., and Portland, Oreg., report that those cities are zoned for use only. Detroit, Mich., and Reading, Pa., report that their cities are still unzoned.

### Special Provisions of Various Ordinances

From several cities interesting information was received in addition to that from which the foregoing tables were compiled. For example:

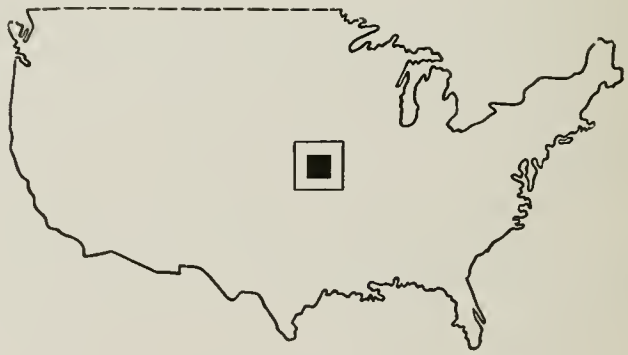
*Nashville, Tenn.*—While the palm for possible excessive cubage goes to Nashville, which would allow a residential building of over 6,500,000 cubic feet on the widest street in its downtown area, it also wins the palm for the greatest spaciousness in its multifamily districts. Gerald Gimre, city planning engineer of Nashville, writes: "While the zoning law would permit a residential building of large cubage in the least restricted *commercial* zone, the ordinance requires in the least restricted *residential* zone 1,800 square feet of lot area for each family." (This means only 24 families per acre.)

*Louisville, Ky.*—H. W. Alexander, secretary of the city planning and zoning commission, explains that in the least restricted multifamily district of that city the zoning ordinance provides that there shall be a lot area of not less than 250 square feet per family. This regulation, however, does not apply to hotels or apartment hotels, and it is the maximum cubage for the latter which is given in the foregoing table. For the ordinary type of apartment house the provision of 250 square feet of lot area per family would restrict the density to 174 families on a one-acre lot; and this would of course involve a much smaller bulk of building than that permitted for apartment hotels.

*Buffalo, N. Y.*—The cubage figure for Buffalo as given in the table is for a special apartment-house classification, the definition of which is "a building having apartments with cooking facilities and also a central dining room." Such a building on a 100-foot street could rise to a height of 150 feet, or one and one-half times the width of the street; and it could occupy 55 percent of an interior lot of 65 percent of a corner lot. For the ordinary type of apartment houses E. G. Speyer, consulting engineer of the Buffalo Planning Board, points out, the restrictions are more drastic. The height is limited to one-half the width of the street upon which it faces, except that for each one foot that the building sets back from the street line, one foot may be added to the initial height limit. For such buildings the lot coverage is limited to 40 percent on an interior lot, or 50 percent of the area of a corner lot.

*Fort Wayne, Ind.*—As reported by Robert B. Hanna, consultant, the Fort Wayne ordinance contains the following provision for apartment-house districts: The aggregate volume in cubic feet of all buildings on a lot, exclusive of the ground story of a private garage or community garage and the ground story of other auxiliary buildings, shall not exceed the area of the lot in square feet multiplied by 24, or by 30 in the case of a corner lot.

*Spokane, Wash.*—B. H. Kizer, president of the city plan commission, writes: Permit us to suggest that the density limit or land-overcrowding provision is not a necessity for Spokane, due to the fact that our little city is one of the most widely dispersed in America. It occupies 66 square miles with a population of 120,000, is a commercial city with no industrial section, and even its poorest sections do not suffer from overcrowding.



From *The American City* for January 1937

FIGURE 69.—Plenty of room for spacious housing

The solid black spot on this map of the United States is 100 miles square. According to studies by Sir Raymond Unwin, this space is ample to house the entire population of the United States in towns having an average density of not more than 10 families to the acre

The larger square is 200 miles across. If half of it were properly apportioned among the urban families of the United States—of whom there are about 17,400,000—there would be approximately three-fourths of an acre of land for each family; and if the other half were assigned to other municipal purposes, there would still remain 2,986,789 square miles—98.7 percent of land area in the country for farms, forests, mines, national and State parks, and other nonurban uses

# PART III—APPENDIX D

## AMOUNT AND DISTRIBUTION OF PUBLIC LAND IN SELECTED URBAN AREAS IN THE UNITED STATES[1]

In tabulating figures from 21 returns to the National Resources Committee questionnaire, much of the original data has been combined for purposes of simplification. For instance, county- and city-owned land within city limits devoted to similar uses is combined in tabulation. This is justified because, in the case of large cities at least, the major contribution to county expenditures comes from the city. County land within the city serves chiefly the city population. In the case of the smaller cities, county land within city limits is negligible. The table shows the amount but not the use of land owned by State, Federal, or other public bodies (except in one or two places by footnotes). In the main, State and Federal lands within or near cities, except for post offices and similar uses requiring little land, serve an area much larger than the city and its environs. State capitols and administrative offices, State universities and institutions, Federal court buildings and prisons, all require amounts of land little related to the size or development of the city. State and Federal parks, which chiefly serve the city they are in or near, have been included in totals for all park land whenever the acreage is known.

It is fully recognized that the municipal area within corporate limits usually does not represent the true amount of developed urban land in the region. Some of the territory within the city limits may be entirely undeveloped, while outside the city proper there may be considerable developed urban land. To circumvent this difficulty as far as feasible, data have been collected on land in the metropolitan or urbanized area both within and outside the city limits. No total of land both within and outside the city has been given (except in the case of parks) because this gives an unreliable impression. Rather, it is better to consider land inside the city limits as directly serving the highly urbanized territory and that outside as supplementary, including such uses as outlying parks and watersheds.

In order to compare cities of different size, actual acreage figures have been reduced to acres per 1,000 population in one column and to a percentage of the total land area of the city in another. Although the acreage figures are as of 1936, population data are taken from the 1930 census, since no reliable figures on population since 1930 are available. It is felt that population figures have not changed sufficiently to make this more than a negligible source of error. Figures on total land area of cities are as of 1936 from the Bureau of the Census. Total land acreage per 1,000 persons is only a rough measure of density, since a city may have within its boundaries many acres of undeveloped land and at the same time a high or a low density on its improved land.

In measuring how well a city is provided with parks and school grounds, acres per 1,000 population is a more significant index than percentage of total city area. On the other hand, the more significant index for streets and alleys is the percentage of a city area they cover. In some of the cities which include large undeveloped areas, the percentage of area in parks and school sites indicates how well that city has bought in advance of possible needs. For city-owned land outside city limits, acres per 1,000 population is probably the better index. For land owned by other units of government outside the city, acres per 1,000 population of the entire urban region would give a better basis of comparison with other urban areas. This added refinement was not considered worthwhile, however, because few cities gave figures on this type of public land.

The summarization of these data is on a supplementary table. Cities have been grouped according to size of population. New York is too large to be included with any other cities. In the 1,000,000–200,000 population group are 8 cities; in the 200,000–50,000 population group, 7; and in the group under 50,000 population, 5. In all cases, the number of cities in each group is too small to make the averages representative of all American cities in the population group. The large number of unknowns also tends to make the figures less reliable. Within limits, however, they do reveal significant relationships. Ratios of acreage per 1,000 population and percentages of total city land area have been averaged without weighting by size of cities, in order that large cities would not have undue influence.

[1] By William H. Ludlow.

TABLE 1.—*Distribution of public land in selected urban areas in the United States in 1936*

| Population of city, 1930 | New York, N. Y. 6,930,446 | | | St. Louis, Mo. 821,960 | | | Milwaukee, Wis. 578,249 | | | Minneapolis, Minn. 464,356 | | | Indianapolis, Ind. 364,161 | | | Rochester, N. Y. 328 132 | | | Louisville, Ky. 307 715 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area |
| Total city land area | 191,360 | 27.61 | 100.00 | 39,277 | 47.78 | 100.00 | 27,740 | 47.97 | 100.00 | 35,445 | 76.33 | 100.00 | 33,600 | 92.27 | 100.00 | 21,925 | 66.82 | 100.00 | 23,024 | 74.82 | 100.00 |
| *Within city limits* | | | | | | | | | | | | | | | | | | | | | |
| City- and county-owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Public administration [1] | 27 | .01 | .01 | 29 | .04 | .07 | 37 | .06 | .13 | 50 | .11 | .14 | (10) | | | 11 | .03 | .05 | 9 | .03 | .04 |
| Institutions [2] | 1,232 | .18 | .64 | 150 | .18 | .38 | 9 | .02 | .03 | 10 | .02 | .03 | 12 | .03 | .03 | 95 | .29 | .43 | 23 | .07 | .10 |
| Education [3] | 1,237 | .18 | .65 | 225 | .27 | .57 | 276 | .48 | 1.00 | 422 | .91 | 1.19 | 164 | .45 | .49 | 200 | .61 | .91 | 190 | .62 | .83 |
| Parks and playgrounds | 14,056 | 2.03 | 7.35 | 2,557 | 3.11 | 6.51 | 1,981 | 3.42 | 7.14 | 2,471 | 5.32 | 6.97 | 2,930 | 8.05 | 8.72 | 1,824 | 5.56 | 8.32 | 1,594 | 5.18 | 6.92 |
| Public enterprises [4] | 845 | .12 | .44 | 780 | .95 | 1.99 | 120 | .21 | .43 | 50 | .11 | .14 | | | | 323 | .99 | 1.48 | 176 | .57 | .76 |
| Wharfs and docks | 4,973 | .71 | 2.60 | 9 | .01 | .02 | 61 | .10 | .22 | 40 | .09 | .11 | | | | 7 | .02 | .03 | 56 | .18 | .24 |
| Miscellaneous [5] | 1,822 | .26 | .95 | X | | | 33 | .06 | .12 | 100 | .21 | .28 | 225 | .62 | .67 | 213 | .65 | .97 | 46 | .15 | .20 |
| Unused | | | | | | | 85 | .15 | .31 | | | | | | | | | | | | |
| Total city- and county-owned lands | 24,192 | 3.49 | 12.64 | [6] 3,750 | 4.56 | 9.56 | 2,602 | 4.50 | 9.38 | 3,143 | 6.77 | 8.86 | 3,331 | 9.15 | 9.91 | 2,673 | 8.15 | 12.19 | 2,094 | 6.80 | 9.09 |
| Streets and alleys | 42,280 | 6.10 | 22.10 | 8,803 | 10.71 | 22.41 | 8,470 | 14.65 | 30.53 | 6,912 | 14.89 | 19.50 | 6,658 | 18.28 | 19.82 | X | | | 4,747 | 15.43 | 20.62 |
| State lands | 695 | .10 | .36 | X | | | 55 | .09 | .20 | X | | | 578 | 1.59 | 1.72 | 25 | .08 | .11 | 182 | .59 | .79 |
| Federal lands | 65 | .01 | .03 | X | | | 432 | .75 | 1.56 | X | | | 4 | .01 | .01 | 5 | .02 | .02 | 136 | .44 | .59 |
| Other public lands | 1,809 | .26 | .05 | | | | 6 | .01 | .02 | | | | | | | | | | | | |
| Total public lands | 69,041 | 9.96 | 36.08 | | | | 11,565 | 20.00 | 41.69 | | | | 10,571 | 29.03 | 31.46 | | | | 7,159 | 23.26 | 31.09 |
| *Outside city limits in urban region* | | | | | | | | | | | | | | | | | | | | | |
| City-owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Institutions [2] | X | | | 782 | .95 | 1.99 | | | | 400 | .86 | 1.13 | | | | X | | | | | |
| Parks and playgrounds | X | | | 139 | .17 | .35 | 585 | 1.01 | 2.11 | 1,374 | 2.96 | 3.87 | X | | | X | | | | | |
| Public enterprises [4] | X | | | 105 | .13 | .27 | | | | 300 | .65 | .85 | X | | | X | | | | | |
| Miscellaneous | | | | | | | | | | | | | | | | | | | | | |
| Total city lands | | | | 1,626 | 1.25 | 2.61 | 585 | 1.01 | 2.11 | 2,074 | 1.47 | 5.85 | | | | | | | | | |
| County-owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Institutions [2] | X | | | X | | | 1,040 | 1.80 | 3.75 | | | | X | | | 432 | 1.32 | 1.97 | | | |
| Parks and playgrounds | X | | | X | | | 2,106 | 3.64 | 7.59 | X | | | X | | | 3,400 | 10.36 | 15.51 | | | |
| Miscellaneous | | | | | | | | | | | | | | | | | | | | | |
| State lands | X | | | X | | | 141 | .24 | .51 | X | | | X | | | 500 | 1.52 | 2.28 | | | |
| Federal lands | X | | | X | | | [7] 3,511 | 6.07 | 12.66 | X | | | X | | | | | | | | |
| Other public lands | | | | | | | | | | | | | | | | 90 | .27 | .41 | | | |
| Total public lands | | | | | | | 7,383 | 12.76 | 26.62 | | | | | | | [9] 4,422 | 13.48 | 20.17 | | | |
| Total parks and playgrounds owned by all public agencies within and outside city limits | X | | | X | | | [8] 4,813 | 8.32 | 17.35 | [9] 3,845 | 8.28 | 10.84 | X | | | [11] 5,224 | 15.92 | 23.83 | [12] 1,690 | 5.49 | 7.34 |

NOTE.—Columns do not add to totals in all cases because totals are computed by averaging figures, some of which are unknown. Averages are deceptive in some cases where large holdings in a single city in a group greatly overweight the average.

X = unknown.

For footnotes see p. 358.

TABLE 1.—*Distribution of public land in selected urban areas in the United States in 1936*—Continued

| Population of city, 1930 | Providence, R. I. 252,981 | | | Dayton, Ohio 200,982 | | | Oklahoma City, Okla. 185,389 | | | Nashville, Tenn. 153,866 | | | Yonkers, N. Y. 134,646 | | | Norfolk, Va. 129,710 | | | Duluth, Minn. 101,463 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area |
| Total city land area | 11,462 | 45.31 | 100.00 | 15,176 | 75.51 | 100.00 | 16,064 | 86.65 | 100.00 | 13,584 | 88.28 | 100.00 | 12,880 | 95.66 | 100.00 | 17,920 | 138.15 | 100.00 | 39,898 | 393.23 | 100.00 |
| *Within city limits* | | | | | | | | | | | | | | | | | | | | | |
| City and county owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Public administration [1] | 11 | .01 | .10 | 48 | .24 | .31 | 11 | .06 | .07 | X | | | 4 | .03 | .03 | 6 | .04 | .03 | 16 | .16 | .04 |
| Institutions [2] | 83 | .33 | .72 | 29 | .15 | .19 | | | | 71 | .46 | .52 | 21 | .16 | .16 | 7 | .05 | .04 | 3 | .03 | .01 |
| Education [3] | 139 | .55 | 1.21 | 129 | .64 | .85 | 214 | 1.15 | 1.33 | 75 | .49 | .55 | 88 | .65 | .68 | 97 | .75 | .54 | 155 | 1.53 | .39 |
| Parks and playgrounds | 956 | 3.79 | 8.34 | 159 | .79 | 1.05 | 853 | 4.60 | 5.31 | 669 | 4.35 | 4.93 | [15] 1,392 | 10.34 | 10.81 | 479 | 3.69 | 2.68 | 4,100 | 40.41 | 10.28 |
| Public enterprises [4] | 18 | .07 | .16 | 636 | 3.16 | 4.19 | 40 | .22 | .25 | | | | 204 | 1.52 | 1.59 | | | | 50 | .49 | .13 |
| Wharfs and docks | 188 | .74 | 1.64 | | | | | | | 4 | .03 | .03 | 3 | .02 | .02 | 2 | .02 | .01 | | | |
| Miscellaneous [5] | 155 | .61 | 1.35 | 77 | .38 | .51 | | | | 152 | .98 | 1.12 | 5 | .04 | .04 | 366 | 2.82 | 2.04 | 10 | .10 | .03 |
| Unused | | | | | | | 79 | .43 | .49 | 18 | .12 | .13 | 14 | .10 | .11 | | | | | | |
| Total city and county owned lands | 1,550 | 6.13 | 13.52 | 1,078 | 5.36 | 7.10 | 1,197 | 6.46 | 7.45 | [16] 989 | 6.43 | 7.28 | 1,731 | 12.86 | 13.44 | 957 | 7.37 | 5.34 | 4,334 | 42.72 | 10.86 |
| Streets and alleys | 2,648 | 10.47 | 23.10 | 4,150 | 20.65 | 27.35 | X | | | 2,723 | 17.70 | 20.05 | 1,886 | 14.01 | 14.64 | X | | | 5,000 | 49.28 | 12.53 |
| State lands | 206 | .81 | 1.80 | 176 | .88 | 1.16 | X | | | 26 | .17 | .19 | 3 | .02 | .02 | X | | | 11 | .11 | .03 |
| Federal lands | 2 | .01 | .02 | 2 | .01 | .01 | X | | | 7 | .04 | .05 | 1 | 1 | .01 | X | | | 56 | .55 | .14 |
| Other public lands | 520 | 2.05 | 4.54 | | | | X | | | | | | 321 | 2.38 | 2.49 | | | | | | |
| Total public lands | 4,026 | 19.47 | 42.98 | 5,406 | 26.90 | 35.62 | | | | 3,745 | 24.34 | 27.57 | 3,942 | 20.28 | 30.60 | | | | 9,401 | 92.66 | 23.56 |
| *Outside city limits in urban region* | | | | | | | | | | | | | | | | | | | | | |
| City owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Institutions [2] | | | | 13 | .06 | .09 | | | | | | | X | | | 150 | 1.15 | .84 | | | |
| Parks and playgrounds | | | | 302 | 1.50 | 1.99 | 2,567 | 13.85 | 15.98 | 2,550 | 16.57 | 18.77 | X | | | | | | | | |
| Public enterprises [4] | 15,343 | 60.65 | 133.86 | 484 | 2.40 | 3.19 | 12,200 | 65.81 | 75.95 | 138 | .90 | 1.02 | X | | | 1,241 | 9.57 | 6.92 | | | |
| Miscellaneous | | | | 19 | .09 | .12 | 710 | 3.83 | 4.42 | | | | | | | | | | | | |
| Total city lands | 15,343 | 60.65 | 133.86 | 818 | 4.07 | 5.39 | 15,477 | 83.48 | 96.35 | 2,688 | 17.47 | 19.79 | | | | 1,391 | 10.72 | 7.76 | | | |
| County owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Institutions [2] | | | | | | | X | | | X | | | X | | | X | | | | | |
| Parks and playgrounds | | | | | | | X | | | X | | | X | | | X | | | | | |
| Miscellaneous | | | | | | | | | | | | | | | | | | | | | |
| State lands | | | | | | | X | | | X | | | X | | | X | | | | | |
| Federal lands | | | | 586 | 2.91 | 3.86 | X | | | X | | | X | | | X | | | | | |
| Other public lands | | | | | | | | | | | | | | | | | | | | | |
| Total public lands | | | | 1,404 | 6.98 | 9.25 | | | | | | | | | | | | | | | |
| Total parks and playgrounds owned by all public agencies within and outside city limits | [13] 1,153 | 4.56 | 10.06 | 461 | 2.29 | 3.04 | [9] 3,420 | 18.45 | 21.29 | [9] 3,219 | 20.92 | 23.70 | X | | | X | | | 4,100 | 40.41 | 10.28 |

For footnotes see p. 358.

TABLE 1.—*Distribution of public land in selected urban areas in the United States in 1936*—Continued

| Population of city, 1930 | Pasadena, Calif. 76,086 | | | Lincoln, Nebr. 75,933 | | | Phoenix, Ariz. 48,118 | | | Norwalk, Conn. 36,019 | | | Tucson, Ariz. 32,506 | | | Michigan City, Ind. 20,735 | | | Medford, Oreg. 11,007 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area | Acres | Acres per 1,000 persons | Percent of total city area |
| Total city land area | 15,565 | 204.57 | 100.00 | 15,602 | 205.47 | 100.00 | 4,112 | 85.46 | 100.00 | 14,477 | 399.15 | 100.00 | 4,673 | 143.76 | 100.00 | 4,400 | 164.58 | 100.00 | 2,020 | 138.52 | 100.00 |
| *Within city limits* | | | | | | | | | | | | | | | | | | | | | |
| City and county owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Public administration [1] | 5 | .07 | .03 | 16 | .21 | .10 | 5 | .10 | .12 | 1 | .03 | .01 | 5 | .15 | .11 | 2 | .07 | .05 | 2 | .18 | .10 |
| Institutions [2] | 1 | .01 | .01 | 5 | .07 | .03 | | | | | | | 8 | .25 | .17 | | | | | | |
| Education [3] | 208 | 2.73 | 1.34 | 83 | 1.09 | .53 | 50 | 1.04 | 1.22 | 40 | 1.11 | .28 | 88 | 2.71 | 1.88 | 40 | 1.50 | .91 | X | | |
| Parks and playgrounds | 1,025 | 13.47 | 6.58 | 756 | 9.96 | 4.85 | 98 | 2.04 | 2.38 | 81 | 2.25 | .56 | 31 | .95 | .66 | 126 | 4.71 | 2.86 | 5 | .45 | .25 |
| Public enterprises [4] | 942 | 12.38 | 6.05 | | | | 2 | .04 | .05 | 25 | .69 | .17 | 877 | 26.98 | 18.77 | 21 | .79 | .48 | 5 | .45 | .25 |
| Wharfs and docks | | | | | | | | | | 3 | .08 | .02 | | | | | | | | | |
| Miscellaneous | 94 | 1.24 | .60 | 28 | .37 | .18 | | | | 9 | .25 | .06 | | | | 9 | .34 | .20 | | | |
| Unused | | | | | | | | | | | | | | | | | | | | | |
| Total city and county owned lands | 2,275 | 29.90 | 14.61 | 888 | 11.70 | 5.69 | 155 | 3.22 | 3.77 | 159 | 4.41 | 1.10 | 1,009 | 31.04 | 21.59 | 198 | 7.41 | 4.50 | X | | |
| Streets and alleys | 2,051 | 26.96 | 13.18 | X | | | 1,313 | 27.29 | 31.93 | X | | | 2,165 | 66.60 | 46.33 | X | | | 611 | 55.51 | 30.25 |
| State lands | | | | 1,085 | 14.29 | 6.95 | 14 | .29 | .34 | [17] 149 | 4.14 | 1.03 | 354 | 10.89 | 7.58 | 1 | .04 | .02 | | | |
| Federal lands | 1 | .01 | .01 | 2 | .03 | .01 | 3 | .06 | .07 | 4 | .11 | .03 | | | | 4 | .15 | .09 | 1 | .09 | .05 |
| Other public lands | | | | | | | | | | | | | | | | | | | | | |
| Total public lands | 4,327 | 56.87 | 27.80 | | | | 1,485 | 30.86 | 36.11 | | | | 3,528 | 108.53 | 75.50 | | | | | | |
| *Outside city limits* | | | | | | | | | | | | | | | | | | | | | |
| City owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Institutions [2] | | | | | | | | | | | | | | | | | | | | | |
| Parks and playgrounds | | | | 600 | 7.90 | 3.84 | 254 | 5.28 | 6.18 | | | | 480 | 14.77 | 10.27 | X | | | | | |
| Public enterprises [4] | 288 | 3.79 | 1.85 | | | | | | | 256 | 7.11 | 1.77 | | | | | | | 10 | .91 | .49 |
| Miscellaneous | | | | | | | 40 | .83 | .97 | | | | 1,619 | 49.80 | 34.65 | | | | [18] 347 | 31.52 | 17.18 |
| Total city owned lands | 288 | 3.79 | 1.85 | 600 | 7.90 | 3.84 | 294 | 6.11 | 7.15 | 256 | 7.11 | 1.77 | 2,099 | 64.57 | 44.92 | | | | 357 | 32.43 | 17.67 |
| County owned lands: | | | | | | | | | | | | | | | | | | | | | |
| Institutions [2] | X | | | | | | | | | | | | | | | | | | | | |
| Parks and playgrounds | 10 | .13 | .06 | | | | | | | | | | | | | | | | | | |
| Miscellaneous | | | | | | | 64 | 1.33 | 1.56 | | | | 128 | 3.94 | 2.74 | | | | | | |
| States lands | X | | | 1,299 | 17.11 | 8.32 | 237 | 4.93 | 3.76 | X | | | 643 | 19.78 | 13.76 | | | | | | |
| Federal lands | X | | | | | | 267 | 5.55 | 6.49 | X | | | 117 | 3.60 | 2.50 | | | | | | |
| Other public lands | | | | | | | | | | | | | | | | | | | 47 | 4.27 | 2.33 |
| Total public lands | | | | 1,899 | 25.01 | 12.16 | 862 | 17.92 | 20.96 | | | | 2,987 | 91.89 | 63.92 | | | | 404 | 36.70 | 20.00 |
| Total parks and playgrounds owned by all public agencies within and outside city limits | 1,035 | 13.60 | 6.64 | 1,356 | 17.86 | 8.69 | [16] 432 | 8.98 | 10.51 | X | | | 511 | 15.72 | 10.93 | | | | 5 | .45 | .25 |

[1] Public administration includes city halls, courthouses, fire houses, etc.

[2] Insitutions include public hospitals, jails, asylums, etc.

[3] Education includes public schools, colleges, libraries, museums, auditoriums, etc.

[4] Public enterprises include waterworks, incinerators, sewage-disposal plants, electric light and power plants, etc.

[5] Includes public cemeteries, dumps, and land not falling in any other classification.

[6] Does not include an unknown amount of miscellaneous land.

[7] Resettlement Administration, Greendale project.

[8] Including 141 acres of State park land outside city limits. Not including park area of the Greendale project.

[9] City owned only. Amounts owned by other units of Government unknown.

[10] Included in schools.

[11] Does not include city owned lands outside city limits if any.

[12] Includes 96 acres of Federal land.

[13] Includes 197 acres owned by the State and other public authorities.

[14] Not including land used for public administration.

[15] Largely county parks and parkways serving the New York region

[16] Includes 80 acres of State land.

[17] Merritt Parkway.

[18] Includes airport.

TABLE 2.—*Average acreage per 1,000 population of all land, and average percentage publicly owned, in 1936, in cities grouped according to 1930 population*

| Population of city, 1930 | Average number of acres of all land and of public land per 1,000 population | | | | Average percentage of total city area in public ownership | | | |
|---|---|---|---|---|---|---|---|---|
| | 1,000,000 —200,000 | 200,000 —50,000 | Under 50,000 | All cities | 1,000,000 —200,000 | 200,000 —50,000 | Under 50,000 | All cities |
| Total city land area | 65.85 | 173.14 | 195.29 | 130.61 | | | | |
| *Within city limits* | | | | | | | | |
| City and county owned lands: | | | | | | | | |
| Public administration [1] | 0.08 | 0.10 | 0.11 | 0.09 | 0.12 | 0.05 | 0.08 | 0.08 |
| Institutions [2] | .14 | .11 | .05 | .11 | .24 | .11 | .03 | .14 |
| Education [3] | .57 | 1.20 | 1.59 | .97 | .88 | .77 | 1.07 | .84 |
| Parks and playgrounds | 4.40 | 12.40 | 2.08 | 6.36 | 6.75 | 6.49 | 1.34 | 5.40 |
| Public enterprises [4] | .76 | 2.09 | 5.79 | 2.37 | 1.14 | 1.15 | 3.94 | 1.78 |
| Wharfs and docks | .14 | .01 | .02 | .10 | .28 | .01 | .01 | .24 |
| Miscellaneous [5] | .38 | .79 | .12 | .45 | .59 | .57 | .05 | .47 |
| Unused | X | .08 | | X | X | .09 | | X |
| Total city and county lands | 6.43 | 16.78 | 11.52 | 10.92 | 9.95 | 9.24 | 7.74 | 9.39 |
| Streets and alleys | 15.01 | 26.99 | 49.80 | 26.99 | 23.33 | 15.10 | 36.17 | 23.62 |
| State lands | .67 | 2.92 | 3.07 | 2.01 | .96 | 1.44 | 1.79 | 1.31 |
| Federal lands | .21 | .13 | .08 | .11 | .37 | .04 | .05 | .16 |
| Other public lands | X | X | | X | X | X | | X |
| Total public lands within city limits | 23.37 | 50.77 | 69.70 | 39.20 | 36.57 | 27.38 | 55.81 | 36.67 |
| *Outside city limits in urban region* | | | | | | | | |
| City owned lands: | | | | | | | | |
| Institutions [2] | .27 | X | X | X | .46 | X | X | X |
| Parks and playgrounds | .96 | 6.39 | 5.01 | 3.50 | 1.39 | 6.13 | 4.11 | 3.96 |
| Public enterprises [4] | 10.64 | 13.35 | 1.60 | 11.88 | 23.03 | 14.29 | .45 | 13.30 |
| Miscellaneous | X | X | 16.43 | X | X | X | 10.56 | X |
| Total city lands | 11.91 | 20.56 | 27.56 | 24.13 | 24.99 | 21.60 | 17.88 | 21.93 |
| County owned lands: | | | | | | | | |
| Institutions [2] | | | | | | | | |
| Parks and playgrounds | | | | | | | | |
| Miscellaneous | | | | | | | | |
| State lands [6] | | | | | | | | |
| Federal lands [6] | | | | | | | | |
| Other public lands [6] | | | | | | | | |
| Total public lands | | | | | | | | |
| Total parks and playgrounds owned by all public agencies within and outside city limits | 7.48 | 22.25 | 8.38 | 12.95 | 12.08 | 14.12 | 7.23 | 11.77 |

[1] Public administration includes city halls, courthouses, fire houses, etc.

[2] Institutions include public hospitals, jails, asylums, etc.

[3] Education includes public schools, colleges, libraries, museums, auditoriums, etc.

[4] Public enterprises include waterworks, incinerators, sewage disposal plants, electric light and power plants, etc.

[5] Includes public cemeteries, dumps and land not falling in any other classification.

[6] Insufficient data to make averages reliable.

NOTE.—Columns do not add to totals in all cases because totals are computed by averaging figures, some of which are unknown. Averages are deceptive in some cases where large holdings in a single city in a group greatly overweight the average.

X = Unknown.

# PART III—APPENDIX E

## ANALYSIS OF EFFECT OF GRADED TAX IF ADOPTED IN CERTAIN AMERICAN CITIES[1]

There has been much theoretical discussion of late as to the advisability of so modifying the customary method of real-estate taxation in American cities as to derive a larger proportion of tax revenues from land values and a smaller proportion from levies on buildings and other improvements. No comprehensive studies have ever been made, however, as to how the various groups of property owners in a given city would be affected financially by a shift to a graded tax of this kind. The object of the investigation described below was to make a start toward supplying such data for several typical municipalities.

Through the cooperation of local officials, aided in several cases by W. P. A. workers, data concerning the assessed value of taxable improvements and their sites were obtained for 16 cities. The total assessed value of the improvements in a given municipality was compared with the total assessed value of taxable land (other than vacant lots). The resulting ratio of building value to land value was considered "par" for that city. For example, in a city where taxable nonvacant land was assessed at $80,000,000 and improvements at $120,000,000, the ratio of building value to land value would be one and one-half to one. In that city, an improvement would thus be "under par" if valued at less than 150 percent of its site value and "over par," if at more than 150 percent.

Separate data were obtained for the following classes of property:

1. Single-family or two-family homes assessed at less than $10,000 for land and buildings combined.
2. All other property wholly residential.
3. All property having business and residential uses in the same building.
4. All property used wholly for business purposes.
5. All property used for industrial purposes.
6. All taxable property of public utilities.
7. All taxable property used for any other purposes.
8. Vacant land.

Calculations were made as to the effect on each class of property of a shift from the present tax system to one whereby the same amount of revenue would be raised on the same assessed valuations but at a tax rate which would be one-half as high on improvements as on land.

To avoid a too-complicated questionnaire, no relative factors which might influence the result were taken into consideration. No adjustment was made, for example, for the relation of assessment values to real market values. No consideration was given to the revenue gleaned from special and benefit assessments or from the personal-property tax. No estimate was made of increased or decreased revenues from marginal properties which might be forced, by the graded tax, either to make improvements or to go into public ownership. Furthermore, the study made no estimate of changes in the assessed valuations which might take place after the application of the graded tax.

These relative factors are difficult to measure and evaluate. Even disregarding them, however, it is believed that the tentative conclusions to be drawn from this study are of real interest and value.

The cities whose data followed the questionnaire form are listed in tables 1 and 2. A study according to census tracts was made in Boston, but because of the special nature of this Boston study, the general references in the present analysis do not include Boston, unless specific mention is made to that effect.

Using the Federal Census figures of 1930, the 15 cities in the main study aggregate a total population of almost 2 million. They range in size from more than one-half million to slightly over 1,000 population. They may be divided into two population groups—7 with over 20,000, and 8 with less than that population. Although the line of demarcation between self-contained and satellite cities is often difficult to draw, for purposes of comparison 7 cities are called self-contained, 6 satellite, and 2 are placed in the borderline category as possessing characteristics of both types.

Except for the fact that no figures were received from any city in the far West or the far South, these cities represent a fairly good sampling. The average development of improved property, or "par," begins at 81 percent for the second largest city and goes to 565 percent for the fourth smallest municipality. The median par is 247 percent. The compilations show that, for improved property, land values tend to bear a smaller relation to building values in small cities than in larger cities. For example, of the 8 places of less than 20,000 population 5 are over the average par and 3 are slightly under. The average par of these 8 cities

[1] By George A. Blair.

is 307 percent, while the average of the 7 cities over 20,000 is only 178 percent.

After applying the graded tax—that is, adjusting the rates without changing the total budget, so that the tax rate on improvements equals one-half that on land—it is found, as might be expected, that in almost all cases over-par developed properties would pay less and under-par developed properties would pay more, than under the ordinary straight tax. The graded tax would appear to be especially beneficial to the small home owner and also to serve as an incentive to the development of vacant land. These tabulations also reveal that industrial property is, in general, highly developed in proportion to its land value, and thus would pay less under the graded tax plan. This is true in all but 1 of our 15 cities.

On the average, under the graded tax plan, vacant land would absorb 63 percent of all the decreases by which other property classifications would benefit. When the 15 cities are arranged according to population, 5 of the 7 with above 20,000 people fall below this 63 percent average. On the other hand, 6 of the 8 other cities are above the average.

In the special study for Boston, conducted under the direction of William Stanley Parker, all land values, and not merely those of improved properties, were used in determining "par." Using this par of about 100 percent, arrived at by dividing total improvement values by total land values—which gives the average development of the entire city instead of the average development of improved property—the study in Boston with nearly 800,000 people serves further to substantiate the findings in the fifteen other cities. Most of the business property was under par, paying 19 millions under the present tax and 22 millions under the proposed graded tax. In an analysis of the results of the Boston survey, Mr. Parker noted that the valuations of the business property were generally too high, and intimated that a still higher tax would be ruinous.[2] He noted also that industrial tracts, "already paying less than their service costs, would be taxed still lower." Special consideration was taken of 15 suburban tracts within the city limits. Using the 100 percent figure as par, it was discovered that they would pay less than $6,000,000 under the graded tax plan, whereas, at the present, they pay nearly $7,000,000, "putting them slightly deeper in the red" (so far as their cost to the city is concerned), according to Mr. Parker.

### Conclusions From the Study as a Whole

1. Over 50 percent of the tax shift would fall upon vacant land, thus forcing a reduction in speculative prices and stimulating improvement or public acquisition.

2. Business properties would feel much of the rest of the weight of the tax shift, which would:

[2] It should be borne in mind, however, that the cost of land is a much greater burden on business than the tax on that land. If the graded tax plan were to force land *prices* down, while maintaining land *values*, as is anticipated by most of its advocates, the total burden on business would be reduced. Moreover, since the tax levies on home owners and tenants, who are the customers of business, would be reduced, much of the money thus saved would be spent in the local stores to the benefit of the business community.

TABLE 1.—*Summary of results of graded tax plan study for 15 municipalities*

| City | Population | "Par"[1] | Assessed value | | Total taxes on real estate | Tax rate per $100 1936[2] | Tax rate under graded plan[3] | | Percent of total tax decrease for other groups absorbed by vacant land | Typical taxes under present and graded plans | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Home owner[4] | | Slum tenement[5] | |
| | | | Land | Buildings | | | Land | Buildings | | Present | Graded | Present | Graded |
| Milwaukee, Wis | 578,249 | 178 | $306,092,180 | $479,713,940 | $24,635,021 | $3.135 | $4.51 | $2.25 | 46 | $250 | $216 | $877 | $1,093 |
| Indianapolis, Ind | 364,161 | 81 | 31,927,522 | 25,179,998 | 1,473,374 | 2.58 | 3.30 | 1.65 | 12 | 206 | 159 | 722 | 794 |
| Louisville, Ky. (6 census tracts) | 307,745 | 278 | 6,491,305 | 16,534,194 | 524,981 | 2.28 | 3.55 | 1.77 | 75 | 182 | 170 | 638 | 854 |
| Yonkers, N. Y | 134,646 | 211 | 125,955,576 | 195,399,060 | 10,787,650 | 3.36 | 4.82 | 2.41 | 67 | 268 | 231 | 940 | 1,157 |
| Trenton, N. J | 123,356 | 217 | 49,743,275 | 100,356,950 | 5,538,698 | 3.69 | 5.54 | 2.77 | 27 | 295 | 266 | 1,033 | 1,330 |
| Little Rock, Ark | 81,679 | 151 | 14,565,650 | 17,839,387 | 1,377,214 | 4.25 | 5.86 | 2.93 | 62 | 340 | 281 | 1,190 | 1,407 |
| Hoboken, N. J | 56,261 | 130 | 33,143,800 | 37,807,300 | 3,611,411 | 5.09 | 6.94 | 2.47 | 57 | 407 | 333 | 1,425 | 1,666 |
| North Little Rock, Ark | 19,418 | 252 | 1,367,366 | 2,428,895 | 144,258 | 3.80 | 5.58 | 2.79 | 94 | 304 | 268 | 1,064 | 1,341 |
| Wintbrop, Mass | 16,852 | 350 | 3,158,275 | 8,376,930 | 199,915 | 2.60 | 4.08 | 2.04 | 99 | 208 | 186 | 728 | 980 |
| Winchester, Mass | 12,719 | 366 | 7,257,650 | 22,539,175 | 822,393 | 2.76 | 4.43 | 2.21 | 65 | 220 | 213 | 773 | 1,065 |
| Manhattan, Kans | 10,136 | 216 | 2,857,510 | 5,665,985 | 339,576 | 3.98 | 5.96 | 2.98 | 36 | 318 | 286 | 1,114 | 1,430 |
| Two Rivers, Wis | 10,082 | 365 | 2,140,600 | 10,487,700 | 334,650 | 2.65 | 4.53 | 2.27 | 47 | 212 | 218 | 742 | 1,087 |
| Madison, N. J | 7,481 | 162 | 3,155,600 | 5,734,000 | 360,917 | 4.06 | 5.99 | 2.99 | 76 | 325 | 288 | 1,137 | 1,410 |
| North Tarrytown, N. Y | 7,417 | 195 | 7,080,460 | 10,934,410 | 774,639 | 4.30 | 6.17 | 3.09 | 80 | 344 | 296 | 1,204 | 1,481 |
| Haworth, N. J | 1,042 | 350 | 1,039,435 | 957,170 | 79,465 | 3.98 | 5.23 | 2.62 | 99 | 318 | 251 | 1,110 | 1,256 |

[1] "Par" is the percentage secured by dividing the total assessed value of taxable improvements in the city by the total assessed value of their sites. The value of vacant land is not included in determining "par."

[2] The tax rate given is for 1936, with the exception of Milwaukee (1935), Indianapolis (1934), and Little Rock and North Little Rock (1935).

[3] Assuming the same total revenues from real estate and no change in assessed values, but a tax rate on buildings one-half that on land values.

[4] Assuming a dwelling assessed at $6,400 on a lot assessed at $1,600.

[5] Assuming an obsolete building assessed at $8,000 on land assessed at $20,000.

(*a*) Induce physical improvement to squalid office buildings.

(*b*) tend toward vertical development of cities to the extent permitted by zoning ordinances.

(c) force some properties into public ownership, making available sun, light, and air to adjoining office buildings through abolishment of the unfit.

3. In the larger cities, many low-class and tenement houses were found. Through a materially higher tax on their usually valuable land, they would be induced to make improvements, which would be lightly taxed.

4. The graded tax plan would promote more home ownership by lowering the taxes on high grade property, and would aid in the development of new large-scale, low-rent housing projects.

In a number of States, attempts of various kinds have been made from time to time to enact laws with the object of decreasing the tax burden on buildings and improvements and of raising public revenues more largely from community-created land values or ground rents. In California, Colorado, Maryland, Oregon, North Dakota, Pennsylvania, Washington, and Wisconsin, considerable strength has been registered at the polls at various times in favor of constitutional amendments or other measures tending in this direction. Agitation for, but no wide-spread support of, similar measures has occurred in Delaware, Illinois, Missouri, New Jersey, New York, Ohio, and in the Congress of the United States. A brief outline of these proposals is available in mimeographed form.

TABLE 2.—*The application of the proposed graded tax plan to the 15 selected cities*

| Item [1] | Underpar development | | | | | Overpar development | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of parcels | Assessed value | | Tax payments | | Number of parcels | Assessed value | | Tax payments | | Tax shift—by groups | |
| | | Land | Buildings | Present | Graded | | Land | Buildings | Present | Graded | Decrease | Increase |
| **MILWAUKEE, WIS.** | | | | | | | | | | | | |
| 1 | 24,069 | $37,636,030 | $42,523,930 | $2,513,015 | $2,657,671 | 48,047 | $62,668,030 | $184,699,860 | $7,754,983 | $6,994,920 | $615,407 | |
| 2 | 1,008 | 11,621,100 | 8,806,050 | 640,391 | 723,061 | 2,110 | 7,444,550 | 22,081,350 | 925,637 | 834,114 | 8,853 | |
| 3 | 1,506 | 8,095,250 | 7,503,150 | 489,010 | 534,568 | 2,452 | 10,444,950 | 46,567,750 | 1,787,348 | 1,521,956 | 219,834 | |
| 4 | 6,039 | 95,517,850 | 52,054,500 | 4,626,393 | 5,484,515 | 2,169 | 14,704,950 | 52,168,200 | 2,096,473 | 1,840,536 | | $602,185 |
| 5 | 595 | 10,329,650 | 7,991,100 | 574,355 | 646,400 | 647 | 10,952,900 | 55,318,050 | 2,077,594 | 1,742,297 | 263,252 | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| Total | 33,217 | 163,199,880 | 118,878,730 | 8,843,164 | 10,046,215 | 55,425 | 106,215,380 | 360,835,210 | 14,642,035 | 12,933,823 | 1,107,346 | 602,185 |
| Vacant | 28,046 | 36,676,920 | | 1,149,822 | 1,654,983 | | | | | | | 505,161 |
| Total | 61,263 | 199,876,800 | 118,878,730 | 9,992,986 | 11,701,198 | 55,425 | 106,215,380 | 360,835,210 | 14,642,035 | 12,933,823 | 1,107,346 | 1,107,346 |
| **INDIANAPOLIS, IND.** | | | | | | | | | | | | |
| 1 | 246 | $430,390 | $178,000 | $15,697 | $17,190 | 4,571 | $4,201,509 | $10,049,798 | $367,684 | $305,362 | $60,829 | |
| 2 | 56 | 1,586,910 | 428,080 | 51,987 | 59,605 | 348 | 1,322,560 | 2,641,180 | 102,264 | 87,479 | 7,167 | |
| 3 | 6 | 115,970 | 33,530 | 3,857 | 4,393 | 72 | 68,813 | 194,340 | 6,789 | 5,494 | 759 | |
| 4 | 163 | 18,106,610 | 5,363,430 | 605,527 | 688,021 | 265 | 4,333,900 | 5,200,840 | 245,996 | 229,502 | | $66,000 |
| 5 | 6 | 56,280 | 35,280 | 2,362 | 2,446 | 35 | 240,560 | 801,750 | 26,892 | 21,229 | 5,579 | |
| 6 | 2 | 174,250 | 27,060 | 5,194 | 6,215 | 2 | 19,440 | 81,320 | 2,600 | 1,988 | | 409 |
| 7 | 4 | 17,680 | 740 | 475 | 598 | 6 | 58,540 | 144,650 | 5,242 | 4,331 | 788 | |
| Total | 483 | 20,488,090 | 6,066,120 | 685,099 | 778,468 | 5,299 | 10,245,322 | 19,113,878 | 757,467 | 656,385 | 75,122 | 66,409 |
| Vacant | 1,310 | 1,191,110 | | 30,808 | 39,521 | | | | | | | 8,713 |
| Total | 1,793 | 21,682,200 | 6,066,120 | 715,907 | 817,989 | 5,299 | 10,245,322 | 19,113,878 | 757,467 | 656,385 | 75,122 | 75,122 |
| **SIX SECTIONS OF LOUISVILLE, KY. (CENSUS TRACTS)** | | | | | | | | | | | | |
| 1 | 1,479 | $1,833,948 | $1,959,068 | $86,481 | $100,081 | 2,426 | $1,800,223 | $7,509,120 | $212,253 | $197,593 | $1,060 | |
| 2 | 100 | 524,775 | 835,500 | 31,014 | 33,527 | 222 | 793,417 | 3,761,806 | 103,859 | 95,130 | 6,216 | |
| 3 | 44 | 107,949 | 115,050 | 5,084 | 5,886 | 23 | 41,080 | 167,750 | 4,761 | 4,445 | | $486 |
| 4 | 174 | 401,530 | 469,200 | 19,853 | 22,628 | 99 | 141,268 | 543,450 | 15,611 | 14,691 | | 1,855 |
| 5 | 12 | 91,876 | 109,750 | 4,597 | 5,220 | 33 | 172,738 | 990,900 | 26,531 | 23,768 | 2,140 | |
| 6 | 3 | 6,530 | 6,200 | 290 | 343 | 0 | | | | | | 53 |
| 7 | 3 | 13,865 | 17,600 | 718 | 806 | 3 | 13,600 | 48,800 | 1,423 | 1,352 | | 17 |
| Total | 1,755 | 2,980,473 | 3,512,368 | 148,037 | 168,491 | 2,807 | 2,962,326 | 13,021,826 | 364,438 | 336,979 | 9,416 | 2,411 |
| Vacant | 539 | 548,506 | | 12,506 | 19,511 | | | | | | | 7,005 |
| Total | 2,294 | 3,528,979 | 3,512,368 | 160,543 | 188,002 | 2,807 | 2,962,326 | 13,021,826 | 364,438 | 336,979 | 9,416 | 9,416 |

For footnotes see p. 365.

TABLE 2.—*The application of the proposed graded tax plan to the 15 selected cities*—Continued

YONKERS, N. Y.

| Item | Underpar development | | | | | Overpar development | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of parcels | Assessed value | | Tax payments | | Number of parcels | Assessed value | | Tax payments | | Tax shift—by groups | |
| | | Land | Buildings | Present | Graded | | Land | Buildings | Present | Graded | Decrease | Increase |
| 1 | 2,773 | $16,730,619 | $18,056,900 | $1,167,793 | $1,242,448 | 9,283 | $20,082,400 | $73,210,100 | $3,131,764 | $2,734,229 | $322,880 | |
| 2+3 | 644 | 8,976,600 | 7,052,775 | 538,095 | 603,062 | 3,001 | 11,103,125 | 51,099,250 | 2,088,090 | 01,767,887 | 255,236 | |
| 4 | 1,466 | 23,309,107 | 10,818,160 | 1,145,628 | 1,385,176 | 245 | 2,073,175 | 7,195,775 | 311,152 | 273,535 | | $201,931 |
| 5 | 66 | 3,965,300 | 4,224,150 | 274,914 | 293,133 | 53 | 1,796,600 | 8,503,965 | 345,783 | 291,744 | 35,820 | |
| 6 | | | | | | | | 12,429,785 | 417,259 | 299,766 | 117,493 | |
| 7 | 34 | 4,353,100 | 2,808,200 | 240,400 | 277,689 | 14 | | | | | | 37,289 |
| Total | 4,983 | 67,334,726 | 42,960,185 | 3,366,840 | 3,801,508 | 12,582 | 35,055,300 | 152,438,875 | 6,294,048 | 5,367,161 | 731,429 | 239,220 |
| Vacant | 24,479 | 33,565,550 | | 1,126,772 | 1,618,981 | | | | | | | 492,209 |
| Total | 29,462 | 90,900,276 | 42,960,185 | 4,493,602 | 5,420,489 | 12,582 | 35,055,300 | 152,438,875 | 6,294,048 | 5,367,161 | 731,429 | 731,429 |

TRENTON, N. J.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,996 | 4,117,225 | 5,926,850 | 370,626 | 392,483 | 17,594 | 10,788,800 | 43,874,850 | 2,017,089 | 1,814,026 | 181,206 | |
| 2 | 361 | 2,927,800 | 3,395,250 | 233,321 | 256,389 | 359 | 1,307,525 | 4,869,575 | 227,935 | 207,438 | | 2,571 |
| 3 | 970 | 6,188,750 | 5,135,625 | 417,870 | 485,379 | 1,777 | 2,331,750 | 9,542,425 | 438,157 | 393,720 | | 23,072 |
| 4 | 683 | 13,077,300 | 6,355,825 | 717,082 | 901,032 | 318 | 2,014,000 | 8,158,025 | 375,348 | 337,738 | | 146,340 |
| 5 | 61 | 852,400 | 1,202,025 | 75,808 | 80,563 | 129 | 1,779,875 | 9,875,800 | 430,094 | 372,369 | 52,970 | |
| 6 | 20 | 192,025 | 119,600 | 11,499 | 13,959 | 11 | 148,825 | 685,750 | 30,796 | 27,255 | 1,081 | |
| 7 | 391 | 408,450 | 256,750 | 24,546 | 29,756 | 101 | 126,025 | 958,600 | 40,022 | 33,553 | 1,259 | |
| Total | 5,482 | 27,763,950 | 22,391,925 | 1,850,752 | 2,159,561 | 20,289 | 18,496,800 | 77,965,025 | 3,559,441 | 3,186,099 | 236,516 | 171,983 |
| Vacant | 3,796 | 3,482,525 | | 128,505 | 193,038 | | | | | | | 64,533 |
| Total | 9,278 | 31,246,475 | 22,391,925 | 1,979,257 | 2,352,599 | 20,289 | 18,496,800 | 77,965,025 | 3,559,441 | 3,186,099 | 236,516 | 236,516 |

LITTLE ROCK, ARK.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5,014 | 3,229,793 | 2,401,740 | 239,340 | 259,820 | 10,771 | 2,618,690 | 9,434,952 | 512,280 | 430,203 | 61,597 | |
| 2 | 9 | 12,055 | 30,020 | 1,788 | 1,587 | 28 | 32,010 | 216,110 | 10,545 | 8,214 | 2,532 | |
| 3 | 11 | 3,885 | 3,190 | 301 | 321 | 37 | 56,970 | 164,050 | 9,393 | 8,151 | 1,222 | |
| 4 | 701 | 5,016,105 | 2,189,510 | 306,239 | 358,350 | 494 | 596,704 | 2,566,335 | 134,429 | 110,238 | | 27,920 |
| 5 | 8 | 3,670 | 4,800 | 360 | 356 | 9 | 6,525 | 114,550 | 5,146 | 3,741 | 1,409 | |
| 6 | 3 | 95,950 | 40,800 | 5,812 | 6,823 | 8 | 175,345 | 582,800 | 32,221 | 27,371 | 3,839 | |
| 7 | 6 | 1,565 | 1,700 | 139 | 142 | 7 | 1,340 | 88,830 | 3,832 | 2,683 | 1,146 | |
| Total | 5,752 | 8,363,023 | 4,671,760 | 553,979 | 627,399 | 11,354 | 3,487,584 | 13,167,627 | 707,846 | 590,601 | 71,745 | 27,920 |
| Vacant | 11,561 | 2,715,043 | | 115,389 | 159,214 | | | | | | | 43,825 |
| Total | 17,313 | 11,078,066 | 4,671,760 | 669,368 | 786,613 | 11,354 | 3,487,581 | 13,167,627 | 707,846 | 590,601 | 71,745 | 71,745 |

HOBOKEN, N. J.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 587 | 1,432,100 | 1,014,800 | 124,547 | 134,576 | 1,904 | 3,471,600 | 7,694,200 | 568,339 | 507,822 | 50,488 | |
| 2 | 116 | 1,172,400 | 807,600 | 100,782 | 109,368 | 627 | 2,597,400 | 8,757,900 | 577,985 | 484,067 | 85,322 | |
| 3 | 381 | 4,098,000 | 2,606,800 | 341,274 | 374,787 | 349 | 1,436,600 | 3,384,300 | 245,384 | 217,094 | | 5,223 |
| 4 | 275 | 8,023,700 | 3,109,600 | 566,685 | 664,622 | 168 | 3,103,900 | 7,793,700 | 554,688 | 485,760 | | 29,009 |
| 5 | 1 | 845,200 | 580,000 | 72,543 | 78,768 | 1 | 35,400 | 83,900 | 6,072 | 5,367 | | 5,520 |
| 6 | 6 | 1,597,300 | 443,500 | 103,877 | 126,218 | 6 | 163,000 | 440,500 | 30,718 | 26,593 | | 18,216 |
| 7 | 58 | 722,000 | 375,100 | 55,842 | 63,111 | 16 | 235,500 | 715,400 | 48,400 | 41,160 | | 28 |
| Total | 1,424 | 17,890,700 | 8,937,400 | 1,365,550 | 1,551,450 | 3,071 | 11,043,400 | 28,869,900 | 2,031,587 | 1,767,863 | 135,820 | 57,996 |
| Vacant | 389 | 4,209,700 | | 214,274 | 292,098 | | | | | | | 77,824 |
| Total | 1,813 | 22,100,400 | 8,937,400 | 1,579,824 | 1,843,548 | 3,071 | 11,043,400 | 28,869,900 | 2,031,587 | 1,767,863 | 135,820 | 135,820 |

For footnotes see p. 365.

106099—40——24

TABLE 2.—*The application of the proposed graded tax plan to the 15 selected cities*—Continued

NORTH LITTLE ROCK, ARK.

| Item | Underpar development | | | | | Overpar development | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of parcels | Assessed value | | Tax payments | | Number of parcels | Assessed value | | Tax payments | | Tax shift—by groups | |
| | | Land | Buildings | Present | Graded | | Land | Buildings | Present | Graded | Decrease | Increase |
| 1 | 1,827 | 488,556 | 775,570 | 48,037 | 48,965 | 2,216 | 189,140 | 988,700 | 44,758 | 38,190 | 5,640 | |
| 2 | 0 | | | | | 2 | 3,675 | 22,700 | 1,002 | 840 | 162 | |
| 3 | 9 | 1,530 | 2,550 | 155 | 157 | 7 | 1,575 | 4,925 | 247 | 225 | 20 | |
| 4 | 276 | 171,435 | 235,215 | 15,453 | 16,150 | 107 | 20,020 | 132,745 | 5,805 | 4,827 | 281 | |
| 5 | 10 | 22,235 | 43,600 | 2,502 | 2,461 | 16 | 10,990 | 158,800 | 6,452 | 5,050 | 1,443 | |
| 6 | 13 | 43,135 | 18,725 | 2,351 | 2,933 | 4 | 550 | 14,640 | 577 | 440 | | 445 |
| 7 | 36 | 8,620 | 16,175 | 942 | 934 | 9 | 3,845 | 14,550 | 699 | 621 | 86 | |
| Total | 2,171 | 735,511 | 1,091,835 | 69,440 | 71,600 | 2,361 | 229,795 | 1,337,060 | 59,540 | 50,193 | 7,632 | 445 |
| Vacant | 5,188 | 402,060 | | 15,278 | 22,465 | | | | | | | 7,187 |
| Total | 7,359 | 1,137,571 | 1,091,835 | 84,718 | 94,065 | 2,361 | 229,795 | 1,337,060 | 59,540 | 50,193 | 7,632 | 7,632 |

WINTHROP, MASS.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 624 | 978,950 | 2,168,150 | 81,825 | 84,219 | 720 | 682,900 | 3,756,050 | 115,413 | 104,544 | 8,475 | |
| 2 | 82 | 394,950 | 722,600 | 29,056 | 30,872 | 96 | 167,500 | 1,068,900 | 32,146 | 28,656 | 1,674 | |
| 3 | 6 | 16,700 | 43,100 | 1,555 | 1,561 | 7 | 10,900 | 65,450 | 1,985 | 1,781 | 198 | |
| 4 | 23 | 89,050 | 140,530 | 5,969 | 6,504 | 19 | 38,325 | 212,950 | 6,533 | 5,911 | 87 | |
| 5 | 2 | 4,400 | 12,800 | 447 | 441 | 0 | | | | | 6 | |
| 6 | 8 | 30,650 | 25,850 | 1,469 | 1,779 | 3 | 3,450 | 40,150 | 1,134 | 960 | | 136 |
| 7 | 3 | 14,250 | 46,250 | 1,573 | 1,526 | 6 | 11,050 | 74,150 | 2,215 | 1,965 | 297 | |
| Total | 748 | 1,528,950 | 3,159,280 | 121,894 | 126,902 | 851 | 914,125 | 5,217,650 | 159,426 | 143,817 | 10,737 | 136 |
| Vacant | 554 | 715,200 | | 18,595 | 29,196 | | | | | | | 10,601 |
| Total | 1,302 | 2,244,150 | 3,159,280 | 140,489 | 156,098 | 851 | 914,125 | 5,217,650 | 159,426 | 143,817 | 10,737 | 10,737 |

WINCHESTER, MASS.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 380 | 760,775 | 1,636,675 | 66,169 | 70,095 | 1,497 | 1,063,450 | 7,786,500 | 244,259 | 220,018 | 20,315 | |
| 2 | 394 | 1,987,325 | 4,425,400 | 176,991 | 186,432 | 545 | 1,306,000 | 7,139,525 | 233,097 | 216,425 | 7,231 | |
| 3 | 10 | 63,975 | 66,700 | 3,607 | 4,321 | 20 | 17,600 | 133,050 | 4,158 | 3,734 | | 290 |
| 4 | 53 | 640,300 | 582,550 | 33,751 | 41,352 | 18 | 38,175 | 227,150 | 7,323 | 6,736 | | 7,014 |
| 5 | 4 | 34,975 | 24,600 | 1,644 | 2,099 | 5 | 46,725 | 373,800 | 11,606 | 10,370 | 781 | |
| 6 | 4 | 11,300 | 13,000 | 671 | 790 | 3 | 4,750 | 54,200 | 1,627 | 1,414 | 94 | |
| 7 | 45 | 167,575 | 73,175 | 6,645 | 9,063 | 2 | 525 | 2,850 | 93 | 87 | | 2,412 |
| Total | 890 | 3,666,225 | 6,822,100 | 289,478 | 314,152 | 2,090 | 2,477,225 | 15,717,075 | 502,163 | 458,784 | 28,421 | 9,716 |
| Vacant | 1,330 | 1,114,200 | | 30,752 | 49,457 | | | | | | | 18,705 |
| Total | 2,220 | 4,780,425 | 6,822,100 | 320,230 | 363,609 | 2,090 | 2,477,225 | 15,717,075 | 502,163 | 458,784 | 28,421 | 28,421 |

MANHATTAN, KANS.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 758 | 575,595 | 824,540 | 55,781 | 58,950 | 1,671 | 783,985 | 2,939,060 | 148,326 | 134,478 | 10,679 | |
| 2 | 4 | 7,860 | 13,840 | 865 | 882 | 19 | 17,525 | 123,600 | 5,622 | 4,733 | 872 | |
| 3 | 7 | 14,575 | 16,590 | 1,242 | 1,365 | 13 | 6,755 | 26,455 | 1,323 | 1,192 | 8 | |
| 4 | 133 | 627,670 | 612,135 | 49,394 | 55,720 | 63 | 104,040 | 412,775 | 20,590 | 18,524 | | 4,260 |
| 5 | 6 | 9,960 | 14,385 | 970 | 1,024 | 10 | 21,370 | 88,200 | 4,365 | 3,907 | 404 | |
| 6 | 7 | 342,060 | 39,525 | 15,202 | 21,591 | 7 | 65,870 | 373,280 | 17,496 | 15,069 | | 3,962 |
| 7 | 1 | 2,635 | 5,140 | 310 | 310 | 28 | 43,315 | 176,460 | 8,756 | 7,850 | 906 | |
| Total | 916 | 1,580,355 | 1,526,155 | 123,764 | 139,842 | 1,811 | 1,042,860 | 4,139,830 | 206,478 | 185,753 | 12,869 | 8,222 |
| Vacant | 1,886 | 234,295 | | 9,334 | 13,981 | | | | | | | 4,647 |
| Total | 2,802 | 1,814,650 | 1,526,155 | 133,098 | 153,823 | 1,811 | 1,042,860 | 4,139,830 | 206,478 | 185,753 | 12,869 | 12,869 |

For footnotes see p. 365.

TABLE 2.—*The application of the proposed graded tax plan to the 15 selected cities*—Continued

TWO RIVERS, WIS.

| Item | Underpar development | | | | | Overpar development | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of parcels | Assessed value | | Tax payments | | Number of parcels | Assessed value | | Tax payments | | Tax shift—by groups | |
| | | Land | Buildings | Present | Graded | | Land | Buildings | Present | Graded | Decrease | Increase |
| 1 | 762 | 633,175 | 1,647,350 | 60,434 | 66,022 | 1,149 | 619,075 | 3,852,350 | 118,493 | 115,346 | | 2,441 |
| 2 | 1 | 2,150 | 8,350 | 278 | 286 | 11 | 20,625 | 148,975 | 4,494 | 4,310 | 176 | |
| 3 | 39 | 141,950 | 204,200 | 9,173 | 11,060 | 43 | 55,875 | 303,025 | 9,511 | 9,399 | | 1,775 |
| 4 | 43 | 103,175 | 162,875 | 7,050 | 8,366 | 31 | 60,650 | 322,350 | 10,149 | 10,053 | | 1,220 |
| 5 | 2 | 2,425 | 3,800 | 165 | 196 | 14 | 183,750 | 3,822,425 | 106,164 | 94,910 | 11,193 | |
| 6 | | | | | | | | | | | | |
| 7 | 29 | 32,675 | 12,000 | 1,184 | 1,753 | | | | | | | 569 |
| Total | 876 | 915,550 | 2,038,575 | 78,284 | 87,683 | 1,248 | 939,975 | 8,449,125 | 248,811 | 234,048 | 11,369 | 6,005 |
| Vacant | 1,209 | 285,075 | | 7,555 | 12,919 | | | | | | | 5,364 |
| Total | 2,085 | 1,200,625 | 2,038,575 | 85,839 | 100,602 | 1,248 | 939,975 | 8,449,125 | 248,811 | 234,048 | 11,369 | 11,369 |

MADISON, N. J.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 231 | 367,700 | 468,900 | 33,966 | 36,085 | 1,151 | 632,250 | 3,120,950 | 152,380 | 131,404 | 18,857 | |
| 2 | 49 | 751,800 | 863,850 | 65,595 | 70,938 | 32 | 173,250 | 604,600 | 31,581 | 28,498 | | 2,260 |
| 3 | 29 | 144,775 | 164,700 | 12,565 | 13,611 | 16 | 12,300 | 71,850 | 3,416 | 2,890 | | 520 |
| 4 | 45 | 295,250 | 287,100 | 23,643 | 26,295 | 9 | 28,500 | 133,050 | 6,559 | 5,695 | | 1,788 |
| 5 | | | | | | 1 | 900 | 9,000 | 402 | 324 | 78 | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | 1 | 3,450 | 10,000 | 546 | 506 | 40 | |
| Total | 354 | 1,559,525 | 1,784,550 | 135,769 | 146,929 | 1,210 | 850,650 | 3,949,450 | 194,884 | 169,317 | 18,975 | 4,568 |
| Vacant | 981 | 745,425 | | 30,264 | 44,671 | | | | | | | 14,407 |
| Total | 1,335 | 2,304,950 | 1,784,550 | 166,033 | 191,600 | 1,210 | 850,650 | 3,949,450 | 194,884 | 169,317 | 18,975 | 18,975 |

N. TARRYTOWN, N. Y.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 159 | 372,270 | 491,870 | 37,158 | 38,165 | 398 | 567,930 | 2,164,300 | 117,486 | 101,869 | 14,610 | |
| 2 | 81 | 1,797,810 | 1,173,980 | 127,787 | 147,228 | 173 | 546,420 | 1,897,150 | 105,073 | 92,295 | | 6,663 |
| 3 | 1 | 9,400 | 12,270 | 932 | 959 | 1 | 4,100 | 20,910 | 1,075 | 898 | 150 | |
| 4 | 185 | 1,132,670 | 893,220 | 87,113 | 97,498 | 82 | 392,670 | 2,178,360 | 110,554 | 91,483 | 8,686 | |
| 5 | 33 | 183,960 | 126,380 | 13,345 | 15,258 | 42 | 597,910 | 1,951,200 | 109,612 | 97,142 | 10,557 | |
| 6 | | | | | | | | | | | | |
| 7 | 2 | 4,790 | 6,890 | 502 | 509 | 2 | 2,930 | 17,880 | 895 | 733 | 156 | |
| Total | 461 | 3,500,900 | 2,704,610 | 266,837 | 299,617 | 698 | 2,111,960 | 8,229,800 | 444,695 | 384,420 | 34,159 | 6,663 |
| Vacant | 620 | 1,467,600 | | 63,107 | 90,603 | | | | | | | 27,496 |
| Total | 1,081 | 4,968,500 | 2,704,610 | 329,944 | 390,220 | 698 | 2,111,960 | 8,229,800 | 444,695 | 384,420 | 34,159 | 34,159 |

HAWORTH, N. J.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 104 | 122,960 | 233,980 | 14,206 | 12,597 | 262 | 135,890 | 661,750 | 31,746 | 24,401 | 8,954 | |
| 2 | | | | | | 1 | 4,860 | 12,640 | 696 | 585 | 111 | |
| 3 | | | | | | 3 | 2,850 | 16,500 | 770 | 580 | 190 | |
| 4 | 3 | 4,900 | 2,300 | 287 | 317 | | | | | | | 30 |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | 1 | 2,000 | 30,000 | 1,274 | 888 | 386 | |
| Total | 107 | 127,860 | 236,280 | 14,493 | 12,914 | 267 | 145,600 | 720,890 | 34,486 | 26,454 | 9,641 | 30 |
| Vacant | 719 | 765,975 | | 30,486 | 40,097 | | | | | | | 9,611 |
| Total | 826 | 893,835 | 236,280 | 44,979 | 53,011 | 267 | 145,600 | 720,890 | 34,486 | 26,454 | 9,641 | 9,641 |

[1] The numbers in this "Item" column correspond with those designating the various classes of property on the first page of Appendix E.
[2] Special franchise taxes on utilities.

TABLE 3.—*Application of graded tax plan to 8 classifications of the 127 census tracts, of the city of Boston*

| Predominant types of development in the 127 census tracts | Underpar (100.66 percent) development | | | | Overpar (100.66 percent) development | | | |
|---|---|---|---|---|---|---|---|---|
| | Number of acres net | Net assessed values | Present tax on real estate | Tax under graded plan | Number of acres net | Net assessed values | Present tax on real estate | Tax under graded plan |
| Business, 6 tracts | 341.26 | $514,136,400 | $19,074,460 | $22,023,088 | | | | |
| Industry, 15 tracts | 670.55 | 56,625,400 | 1,908,416 | 2,007,613 | 1,159.97 | $71,462,100 | $2,843,629 | $2,551,371 |
| High-rental housing, 3 tracts | 91.35 | 73,320,900 | 2,720,206 | 2,941,346 | 41.27 | 22,473,500 | 833,767 | 824,224 |
| Miscellaneous housing, 8 tracts | 67.71 | 31,350,700 | 1,163,111 | 1,317,346 | 761.98 | 153,500,300 | 5,694,860 | 5,170,978 |
| Suburban housing, 15 tracts | | | | | 8,892.59 | 188,423,000 | 6,990,478 | 5,805,851 |
| 2-decker housing, 36 tracts | | | | | 2,255.66 | 167,133,400 | 6,200,520 | 5,288,338 |
| Low-rental housing, 15 tracts | 72.63 | 19,069,800 | 707,491 | 732,287 | 208.53 | 30,463,900 | 1,131,354 | 1,083,908 |
| Not classified, 28 tracts | 550.01 | 88,360,700 | 3,278,182 | 3,419,225 | 2,404.28 | 141,042,500 | 5,232,658 | 4,624,645 |
| Total for city | 1,793.51 | 782,863,900 | 28,851,866 | 32,440,905 | 15,724.28 | 774,498,700 | 28,927,266 | 25,349,315 |
| Combined total of "underpar" and "overpar" tracts | 17,517.79 | 1,557,362,600 | 57,779,132 | 57,790,220 | | | | |

According to the information for the year 1934 on which this table is based, compiled under the direction of the Boston City Planning Board, there are 5,273 blocks in the city with an average of 20 parcels each of taxable land. These are divided into 127 census tracts. The assessed value of all the taxable land is $776,119,000 and of taxable improvements, $781,243,600. The tax rate in 1934 was $3.71 per $100, and in that year the total real estate levy for all purposes was $57,778,152.

In the case of Boston, "par" development for property was secured by dividing the total assessed value of taxable improvements by the total assessed value *of all land*, and is therefore "property whose improvements are assessed at 100.66 percent of the assessed value of their land." To correspond with the cities reported in table 2 a correct "par" should relate total improvements to total improved land value, but these figures are not available in Boston for the various census tracts.